

NEWNES' PICTORIAL KNOWLEDGE

VOLUME 2.

AN EDUCATIONAL TREASURY
and
CHILDREN'S DICTIONARY

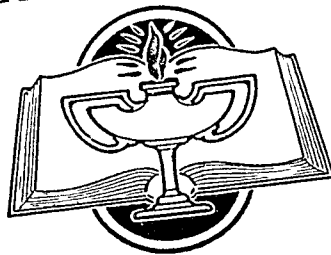
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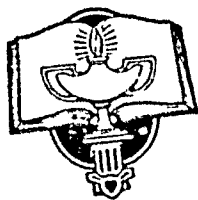
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THE PEARL OYSTER

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The Romance of History



Tales of the Greeks and the Persians



Rischeytz

A READING FROM HOMER

This beautiful picture is reproduced from the original by Sir Laurence Alma-Tadema, R.A. (1836-1912), who was so well known for his paintings of classical subjects, having spent a great part of his life in acquiring knowledge of the Greeks and Romans, their manners and customs. Homer, whose writings are being read to such interested listeners, was a famous Greek author who is believed to have been blind.

THE RICHEST KING IN THE WORLD

LONG, long ago there lived a very rich king. His name was Crœsus, and he was ruler over Sardis, in Lydia. He was so rich that he could buy anything he wanted. His palace was full of wonderful treasures—pictures, jewels, statues, carvings, everything that was beautiful and rare.

Many people came to see these marvellous things. One day a famous Greek, called Solon the law-giver, came from the great city of Athens to see King Crœsus.

"I will amaze Solon," thought the King. "I will show him all my riches, and make him envious, so that he will return to Athens, saying, 'This King Crœsus is the happiest man I have ever met!'"

N.P.K.

But Solon did not seem to envy Crœsus his marvellous treasures, and the king was disappointed.

What Solon Said.

"I will ask this Greek who is the happiest man in the world," he said to himself. "He is sure to say that I am!"

But Solon did not give Crœsus the answer he hoped for. He thought for a moment, and then replied:

"Tellus of Athens was the happiest man I have ever known. He had just enough wealth to keep his family in comfort, and he met his death fighting victoriously for his country. His children mourned for him, and the whole State also. Never have I known so happy a man as Tellus."

c c

"But am I not happier than he?" cried Cræsus wrathfully. "Have I not power and riches without end?"

"These things bring no happiness," said Solon, "for they may be taken away in a day. You are not happy, King Cræsus, and you will not be happy until you die."

Cræsus was silent, for the Greek's words were true. For all his riches, he was a sad man. One of his sons was dumb, and he had dreamed that the other would be killed. These things grieved Cræsus, and he would willingly have given his riches in exchange for peace of mind. He said no more to the wise Greek, but he did not forget his words.

Cræsus Goes to Battle.

Soon after this the king learnt that a new enemy to the east of Sardis was fast growing powerful, and would one day try to take his kingdom of Lydia away from him. This enemy was Cyrus, King of Persia. Cræsus resolved to

fight Cyrus before he grew any stronger; but before he set out to do this he sent to consult the Oracle at Delphi. This Oracle was famous for its wise answers, and Cræsus waited impatiently to hear what the reply would be.

When it came he was delighted.

"If Cræsus crosses the River Halys, he shall destroy a great Empire," said the Oracle.

The Camels win a Fight.

Now, the River Halys was the boundary between Lydia and Persia, so Cræsus felt certain that once he had crossed the river he would defeat the Persians and destroy their Empire. Accordingly, he gathered together a large army and set out.

He crossed the Halys and met the Persian host. Each fought fiercely, but neither could defeat the other. At last Cræsus marched back to Sardis, disappointed.

Now as soon as Cyrus of Persia heard that Cræsus had broken up his army



Solon thought for a moment and then replied. "Tellus of Athens was the happiest man I have ever known."

Specially drawn for this work

CONSULTING THE ORACLE AT DELPHI



King Croesus sent a messenger to consult the Oracle at Delphi. The Oracle was famous for its wise answers, and Croesus waited impatiently to hear what the reply would be.

Specially drawn for this work.

CC 2



Specially drawn for this work.

When the answer to his request came from the Oracle, King Croesus was delighted.

and sent it away, he resolved to march to Sardis and force a battle. Croesus

would have only a few men, and things would go hardly with him. Cyrus did this, and the Lydian king had to gather a small force together and send them against the great army of the Persians.

But the Lydian horsemen were famous for their courage and daring, and were feared by their foes. When the Persians saw them galloping over the plain they were afraid. Then Cyrus thought of a wily plan. He had camels with him, and he knew that horses hated the smell of these strange beasts of the desert.

The Tell-tale Helmet.

So he put his camels in the front row of his army, and as soon as the horses of the Lydians smelt them they became panic-stricken, and reared and plunged madly. All the Lydians were thrown into confusion. But they were too brave to fly. They leapt down from their horses, and fought hand to hand with the oncoming and determined Persians.

But soon they were forced to run, and had to retreat into the city. The gates were shut fast, and the walls were strictly guarded.

Cyrus laid siege to Sardis, but for some time he could find no way up the steep cliffs on which the city was built. Then a Lydian soldier, leaning over the walls, dropped his helmet down the cliff. He jumped over, climbed down and picked it up again. Then he climbed back into the city.

"Oh, Solon ! Solon ! Solon !"

A Persian soldier saw him, and ran to tell Cyrus. At once the king commanded a band of men to take the same path, and capture the city by surprise.

Up the cliff the Persians went, silent and stealthy. They suddenly poured into Sardis, took it and sacked it. All the defenders were slain and King Croesus himself was taken prisoner.

THE RICHEST KING IN THE WORLD

Crœsus thought of what the Oracle had said: "If Crœsus crosses the River Halys, he shall destroy a great Empire." And he knew that the Empire he had destroyed was not that of the Persians, but, alas! his own. The Oracle had spoken truly, but Crœsus had read the answer wrongly.

Wise Words Remembered.

Cyrus commanded that Crœsus should be burnt.

The defeated king was placed on top of a pile of wood, and just as the torch was being held to it he remembered the wise words of Solon the Greek: "Power and riches bring no happiness. You will not be happy until you die."

Then Crœsus wished that he had heeded the Greek's words, and thought less of power and more of peace. He saw the flames mounting up, and in complete despair he called the name of the wise Greek: "Oh, Solon! Solon! Solon!"

Cyrus the Persian heard him cry out, and asked if he were calling on a friend or on a god. Crœsus made no answer at first; and then, thinking that perhaps Cyrus might learn the lesson he himself had forgotten, he told him about Solon, and what he had said.

As Guest and Friend.

The Persian king listened, and his heart was softened. "Put out the flames!" he cried. "This man shall live!"

Thereupon the flames were quenched and Crœsus was pardoned. Cyrus took him to his Court, and for the rest of his life treated him as an honoured guest and friend.

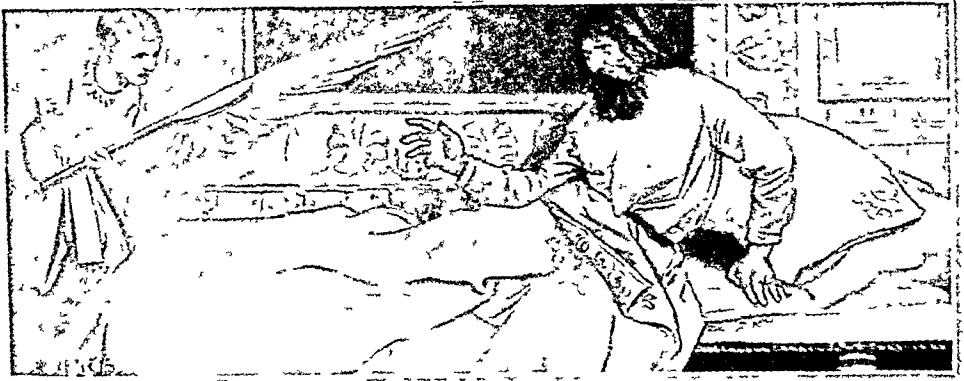
Though Crœsus was spared for many years, however, he could never quite blot from his mind the terrible memory of his anguish when he had been on top of the burning pile of wood.

Very often, too, he would quietly



Specially drawn for this work
A Lydian soldier, leaning over the city walls, dropped his helmet down the cliff.
think of the true words which Solon the Greek had spoken to him.

HOW BABYLON WAS TAKEN



Specially drawn for this work.

One night King Astyages had a dream which made him very much afraid. He dreamt that he would have a grandson who would one day rule in his stead.

THERE was once a king called Astyages, who ruled over the Medes and the Persians. One night he had a dream which made him very much afraid. He dreamt that he would have a grandson who would one day rule in his stead.

Astyages did not forget this, and when he heard that his daughter had a little son, he sent one of his servants to the house, commanding him to take the child and kill it. But the servant, Harpagus, had not the heart to slay the baby. So he sent for a herdsman and bade him take the child and leave it out on the hillside to die.

Now it so happened that the herdsman's own son had died that very day, and the man's wife begged him to let her have the live baby, and to take the little dead one on to the hill instead. So the herdsman did this, and the king's grandson was allowed to live.

The King Knows Cyrus.

Cyrus, the baby boy, grew up thinking that he was the herdsman's son. He was such a strong, handsome boy that all the peasant children round made him their king. One day he was brought before King Astyages himself, and no sooner did the king set eyes on him than he was amazed.

Who was this youth who held himself like a prince, so proudly and commandingly?

He soon found that the boy was indeed no other than his grandson, and sending for Harpagus, he was cruel enough to kill that man's own well-loved son, as a punishment for not slaying Cyrus when he was a baby. Harpagus never forgot this wicked deed, and plotted and planned to overthrow Astyages, and place Cyrus on the throne instead.

Cyrus is Made King of the Medes and Persians.

As soon as Cyrus was old enough, Harpagus told him his plans. The youth was excited, and fell in with them gladly.

When Astyages heard that Cyrus was plotting against him he was angry, for he remembered his dream of long ago. He placed Harpagus in command of his army, and bade him lead it against Cyrus. But Harpagus was longing for his revenge. He led the army to Cyrus, and instead of fighting him, as Astyages had commanded, he went over to his side, and thus Cyrus was able to command his grandfather's army as well as his own.

Astyages was soon defeated, and

A BOY WHO AMAZED A KING



Cyrus grew to be a strong, handsome boy. One day he was brought before King Astyages himself, and no sooner did the King set eyes on him than he was amazed. Who was this youth who held himself like a prince?

Specially drawn for this work.

Cyrus was made king. He might have killed his grandfather in return for his attempt to murder him when a baby, but he did not. Instead, he allowed him to live unharmed as his guest.

Cyrus the Conqueror Goes to Babylon.

Then Cyrus looked around him for other lands to conquer. He marched against Croesus of Lydia, as you have heard, and vanquished him. Then he marched into the heart of Asia, fighting as he went. No nation could withstand him. He conquered all.

At last he came to the mighty city of Babylon. This city was famous, and men said that none could take it. Cyrus resolved to capture it, but for some time he did not know how to set about it.

Babylon was built in the form of a square, and mighty walls ran for sixty miles around the city. Along the top of these thick walls ran a road, and outside them lay a wide moat. Through the middle of the city ran the great River Euphrates, which divided Baby-

lon into two equal halves. All the streets were straight, and where they met the river great gates of brass were built which could be shut fast. Along the riverside were high walls.

In the centre of Babylon was the king's palace. It rose proudly above the walls, beautiful with its many high towers.

The King Makes His Plan.

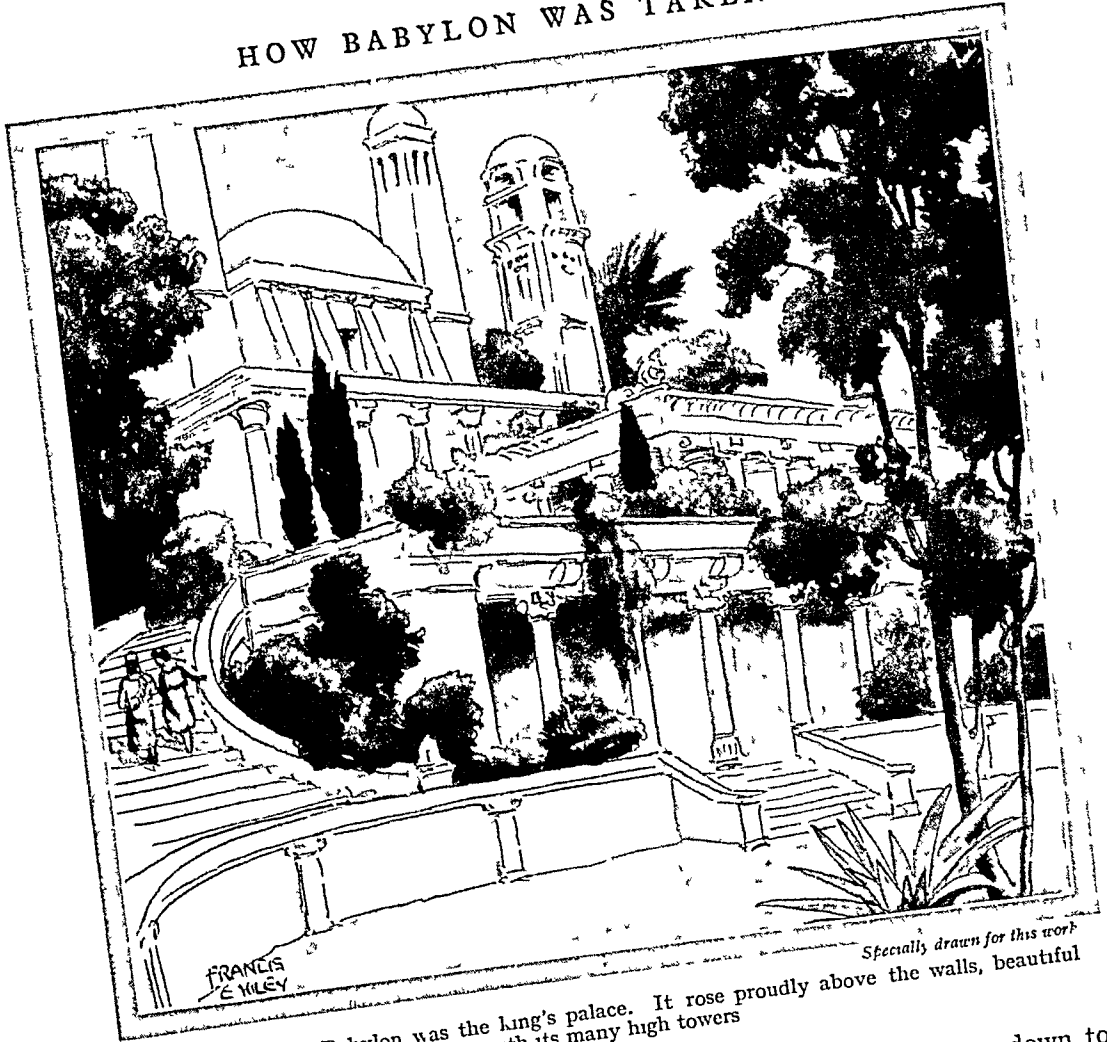
Cyrus marched against the army that came forth from the city to fight him. He defeated it, and the soldiers who were left alive after the fierce battle fled into Babylon and shut the gates. Then Cyrus looked at the closed gates, the wide moat and the high walls, and wondered how he could take such a well-guarded city.

But soon he made a daring plan. He would dry up the river that ran through Babylon and let his men march into the city along the empty bed. But how was he to do this?

Now, there was a large reservoir—a place for holding water—on the banks



Specially drawn for this work
When Cyrus was old enough, Harpagus told him his plans. The youth was excited, and fell in with them gladly. What an adventure his life had been!



In the centre of Babylon was the king's palace. It rose proudly above the walls, beautiful with its many high towers

of the river just outside the city. It was used to draw off some of the river water in flood time. To do that the sluice gates were opened, and then most of the river flowed into the reservoir instead of through the city.

Cyrus opened the sluice gates and let the river run into the reservoir, instead of down its bed and into Babylon. Soon only a trickle was running.

The Taking of Babylon.

Cyrus had put men at each end of the city where the river entered and left. As soon as the river bed was dried up these men marched up it until they

came to the streets that ran down to the river. The brass gates were open, for no one suspected such a daring trick.

It did not take long for the whole Persian army to pour up the streets of Babylon, slaying all they met and destroying all they could lay hands on. The Babylonians fled in terror, and soon most of the city was in the Persians' hands. But so vast was Babylon that many of the people did not know the enemy were in their midst, but spent the night dancing and singing merrily, unaware of any danger.

Thus did Babylon fall, and once again Cyrus was a conqueror.

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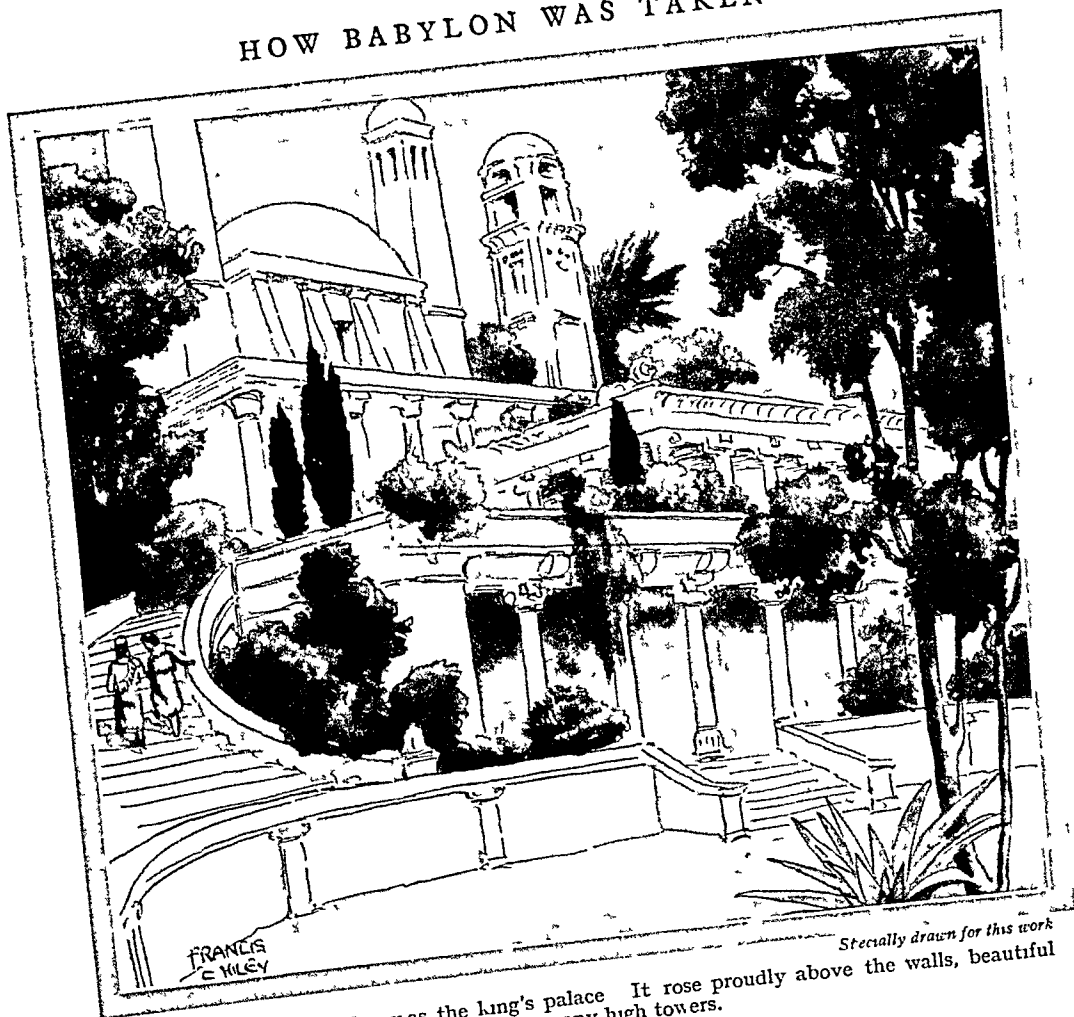
Now, there was a large reservoir—a place for holding water—on the banks



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Speckley's design for this work.

HOW BABYLON WAS TAKEN



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THE TYRANT OF SAMOS



Specially drawn for this work

The messenger returned from Oroetes with stories of tremendous riches and Polycrates hastened to make ready a galley to fetch the Persian and his wealth.

IN the days when Cyrus was conquering the cities of Asia there lived a Greek called Polycrates. He dwelt in Samos, one of the little islands that lie in the Ægean Sea. He was an ordinary citizen, but the idea came into his head to make himself ruler of Samos.

So he gathered together a force of men and marched against the nobles who were then ruling the island. He defeated them and made himself Tyrant of Samos. In those days the name Tyrant simply meant an absolute ruler, and it was not until the Tyrants became cruel and oppressive that the name held the meaning it does now.

Polycrates the Fortunate.

Good fortune seemed to follow Polycrates wherever he went, and whatever he did. He was very rich and very powerful. He had a hundred fine galleys, each rowed by fifty oarsmen.

Then he made friends with Amasis, the King of Egypt. Amasis was glad to be his friend, for Polycrates was so rich and strong.

But one day Amasis thought of a wise saying he had heard: "The gods are jealous of fortunate men," and he became afraid for Polycrates.

"Of all men he is the most fortunate," thought Amasis, troubled.

"Surely he will be punished by the gods and will end his days unhappily?"

Amasis Sends a Letter.

So wise Amasis wrote a letter to his friend and sent it to him.

"Oh, Polycrates," he wrote, "I am glad to hear of your good fortune. But it seems to me that you do not get your share of *ill*-fortune; if the gods become jealous of you, then all your happiness will go, and you will be a miserable man. I beseech you to bring some misfortune upon yourself, so that the wrath of the gods may not visit you. Cast away from you something you value greatly, and when the watching gods see your tears, they will smile and avert their anger from you. Thus saith your friend Amasis."

Polycrates read this letter and decided that his friend was right. He looked through his beautiful treasures, wondering what to cast away, and at last he chose the thing he loved best of all.

This was a marvellous ring. It was a great emerald set in gold, and Polycrates loved it and was proud of it.

The Loss of the Ring.

Polycrates commanded one of his galleys to make ready for sea. Then he went aboard and ordered the men to

THE GUILF OF OROETES



Specially drawn for this work.
Oroetes had cunningly prepared eight chests full of stones with a layer of gold on the top, and these he showed to Polycrates' messenger.

row some way out. When they were far from land, Polycrates slipped the beautiful ring off his finger and threw it into the waters. In a trice it had vanished.

Now, not long after this a fisherman came to the palace with a splendid fish.

"I bring this as a gift to the prince," he said. "It is the finest fish I have ever caught. I should be proud if I knew it would grace the table of Polycrates."

Oroetes Prepares a Trap for Polycrates.

"Thank you, fisherman," said the Tyrant, for he loved to know that the poor people liked him. "Come to dinner with me yourself and we will eat the fish together."

But what was Polycrates' amazement when, on cutting open the fish, his emerald ring was found inside!

"Good fortune will not leave me!" he said, marvelling. "I will write and tell Amasis so."

But Amasis was afraid when he heard about the ring. "The gods will be full of wrath towards you," he wrote. "I am afraid to be friends with you any longer in case I am destroyed with you."

Now, there was a Persian named Oroetes, governor of Sardis for Cyrus the Conqueror. He heard of Poly-

crates, and how he boasted that good fortune never forsook him. So he prepared a trap for him.

He wrote to him to say that he feared that Cyrus was going to kill him, Oroetes, and take his gold. Would Polycrates come and fetch him and his treasures and he should share them with him?

Polycrates was glad to read the letter. He thought he would dearly love to have some of Oroetes' gold. He sent a messenger to say that he would do as Oroetes wished, but would he first show his servant what gold he had?

Oroetes smiled. He prepared eight chests full of stones with a layer of gold on the top, and these he showed to Polycrates' messenger. The man returned with stories of tremendous riches, and Polycrates hastened to make ready a galley to fetch the Persian.

Polycrates Falls into the Trap.

The Tyrant's friends told him he was foolish to trust a Persian, but he laughed at them.

But, alas, for Polycrates! No treasure awaited him. Oroetes was on the watch for him, and as soon as he landed from his galley he was seized and captured. The Persian gave orders for him to be slain, and thus did Polycrates the Fortunate, Tyrant of Samos, perish.



"I bring this as a gift to the prince," said the fisherman. "It is the finest fish I have ever caught. I should be proud if I knew it would grace the table of Polycrates."

Specially drawn for this work.

THE STORY OF SPARTA



Specially drawn for this work

The young Spartan never had enough to eat "If you are hungry, go and hunt on the hillside," said his master. Then the boy would go off to hunt some wild animal and kill it.

WHEN Darius was ruler over the great Persian Empire he turned his eyes longingly to a collection of little states in Greece. There were about 160 of them, all small, no more than cities, and each with a strong wall built all round so that enemies might be kept out.

Darius wanted to add them to his empire. The little city states were fiercely determined that he should not. If he had, then the history of our own little island might have been very different; for if Darius had made Europe part of his kingdom it would have had to suffer under the cruel, fierce rule of Eastern kings, whose ideas of right and wrong were quite different from ours.

Sparta, the City without Walls.

Two of these Greek city states helped more than any others to fight off the Persian kings. One was called Sparta and the other Athens. You shall hear of Sparta in this story.

When you have hurt yourself in some way, and have been brave and not cried out, has any one ever said to you: "Why, you're a proper little

Spartan!"? I expect you have heard that word, and know that it stands for courage and bravery. It has come right down the ages to us, from the time when Sparta was a little state of soldiers.

The Spartan Boy.

Sparta had no walls. Its citizens were always ready to defend their city, and therefore, they said, there was no need to build a wall. Every Spartan was a soldier. He could become nothing else, for the State would not allow him to. There were no Spartan tradespeople or farmers, for every one had to become a soldier. Slaves did all the work that the Spartans had no time to do.

"Strength, obedience, courage," said the Spartans. "These are the three greatest things. We will teach our boys these from their earliest years."

The little Spartan boys had some hard lessons to learn. As soon as they were born they were taken before the city council. The babies were examined carefully. All strong, healthy children were sent back to their mothers. Weakly ones were thrown out on the

hillside to die, for Sparta wanted none but strong men.

Until he was seven years old a Spartan boy was allowed to live with his mother. Then he was taken away from her and sent straight to the training house, where he learnt how to be brave and bold. His life was very hard, but he was not allowed to cry or complain.

He was made to walk barefoot, and this was very painful, for Sparta was a mountainous country. He was allowed to wear one thin garment, winter and summer alike, and though he might shiver all the winter through he must say nothing. His bed was a rough scattering of rushes which he had to get from the riverside himself. He must break the rushes with his hands, and not one cry or tear was he allowed when the hard rushes cut his palms and made them bleed.

Learning to be a Soldier.

The little Spartan never had enough to eat. "If you are hungry, go and hunt on the hillside," said his master. Then the boy would go off to hunt some wild animal and kill it. He would then cook his meat himself, for he had to do everything. No one did anything for him at all.

He was allowed to steal whenever he could, "for," said the Spartans, "soldiers must steal in war-time, therefore our boys must learn to steal too." But the youths must learn to steal without being found out. This seems very strange to us, but it was quite natural to the Spartans, who put the customs of war before everything else. If a boy was discovered to have been stealing he was punished very severely—but not for stealing! His punishment was for being found out.

Sometimes the Spartan youths were whipped in public, so that they might show how much pain they could bear without crying out or flinching. If a boy wept he was so much mocked at that he wanted to die for shame.

The days passed, full of drilling, running, wrestling, jumping and practising with spear and sword. This went on until the boy was sixteen, and then he left the training-house and went to the barracks to be a proper soldier. Here he lived until he was sixty, when he was allowed to leave, and have a home of his own. He married at thirty, but however much he loved his wife and children, he could not make his home with them. He must be a soldier.

In War-Time.

In time of war the strict rules were withdrawn, and the Spartans were allowed to do very much as they liked. They could feast and live well, but there was a reason for this. "If we treat our men hardly in peace time, and well in war-time, they will always long for war," said the leaders. And they were right—the Spartans loved war, and lived for it.

When the youths went to fight, their mothers gave them their big shields with these words: "Come back *with* this shield—or *on* it!" That meant they must come back victorious or dead—none must surrender or run away.

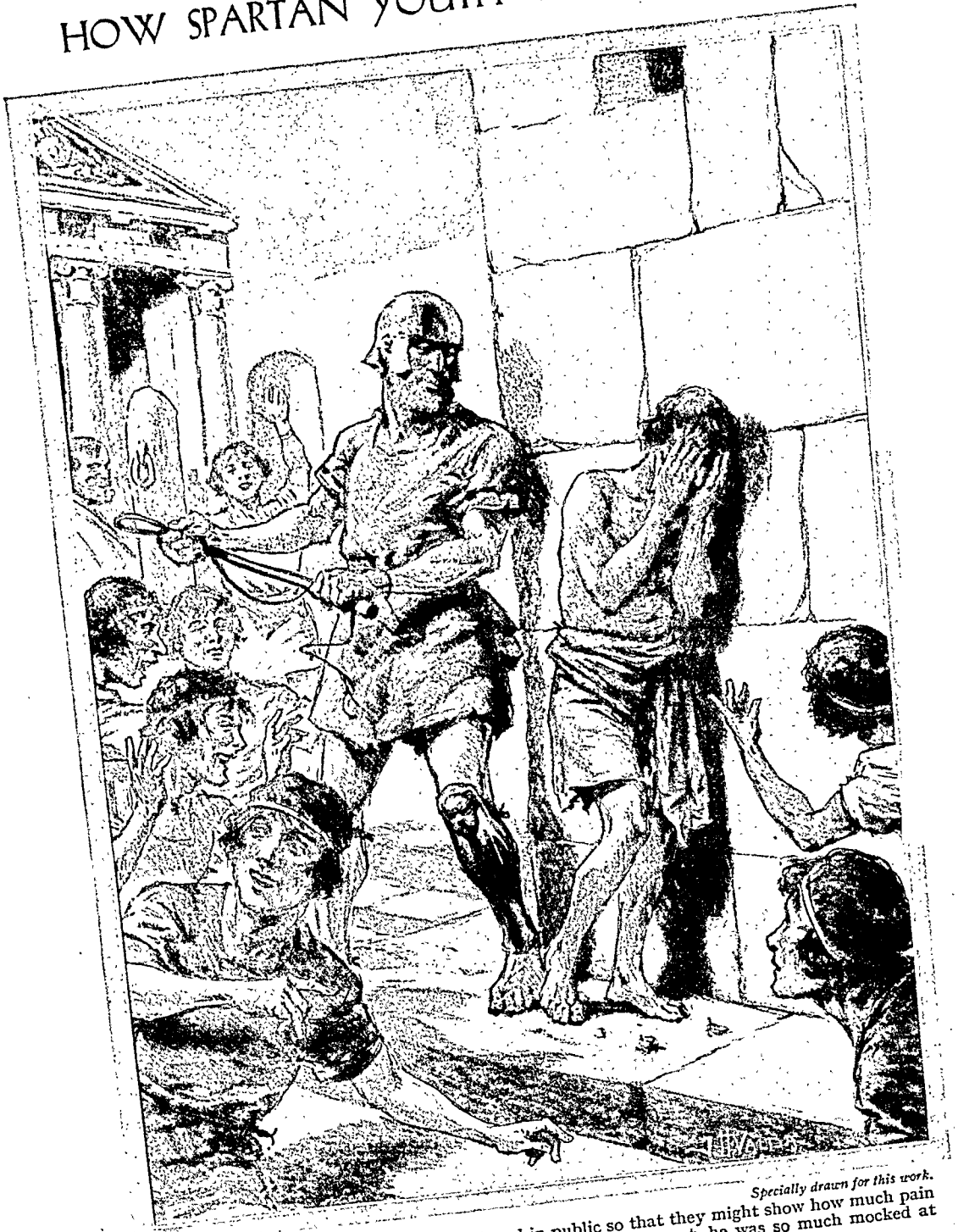
There have probably never been such wonderful soldiers as the Spartans, but marvellous as they were, they did not do anything very good or great for the world. They cared only for fighting, and thought nothing of music, art or books. When they were away from Sparta's discipline they disgraced themselves, for they had never been taught to behave without rules. They could be splendid soldiers, but were good for nothing else.

The Boy and the Fox.

There once lived a little Spartan boy who was very hungry. He went to the garden of a man who kept pet animals, and stole a young fox. He meant to take it home, kill it, and cook it for his dinner.

He stuffed the animal into his shirt,

HOW SPARTAN YOUTH WAS TRAINED



Specially drawn for this work.
Sometimes the Spartan youths were whipped in public so that they might show how much pain they could bear without crying out or flinching. If a boy wept, he was so much mocked at that he wanted to die for shame.

and held it there, so that no one might see it, for he knew that if he were found out he would be severely punished. Then he started walking along the road back to the training-house.

His Test of Courage.

On the way he met a man who stopped to speak to him. The young fox began to bite the boy's chest and scratch him with its claws, causing him great pain. But he dared not say a word.

He stood there talking to the man, letting the fox hurt him without a cry or complaint. When at last he

got to the training-house he was so badly bitten that he died.

That was the sort of courage that every Spartan boy was taught to show.

Sparta had always two kings at a time, who reigned jointly, and they commanded the armies when war was declared. You will be interested to hear, though, that the real rulers were the Ephors, who were chosen by the Spartans themselves or publicly elected.

Thus you may be sure that every Spartan boy, even though he boasted of having no manners, hoped to become an ephor or officer when he grew up.



Specially drawn for this work.
When the youths went to fight, their mothers gave them their big shields with these words:
"Come back with this shield—or on it!" That meant they must come back victorious or dead
—none must surrender or run away.

THE CITY OF BEAUTIFUL THINGS



Specially drawn for this work

Codrus, King of Athens, dressed in peasant's clothing and went straight to the camp of the enemy. He struck the first soldier he met; and, of course, was slain there and then.

YOU have read of Sparta, the kingdom of soldiers. Now you shall hear of another famous little state, Athens, the city of beautiful things.

In Sparta a boy was taught one thing, and one thing only, and that was how to become a good soldier. In Athens many other things were taught. The Athenians loved beauty of any kind. They admired beautiful buildings, fine pictures, graceful vases, lovely poems, splendid statues. They loved learning and knowledge. They wanted to be wise and good, healthy and strong.

How Athens Became what She Was.

At first Athens was governed by kings. Then one of her kings, Codrus, was told by the Oracle that either he or his country would be destroyed.

Now Codrus loved Athens, and the thought that she might be destroyed was terrible to him.

"I will be destroyed myself," said he. "Then my country will be safe."

So he dressed in peasant's clothing, and went straight to the camp of the enemy. He struck the first soldier he met; and, of course, was slain there and then.

"No one is worthy to be king after brave Codrus!" said the Athenians

when they heard of this deed. So Codrus was the last king they had.

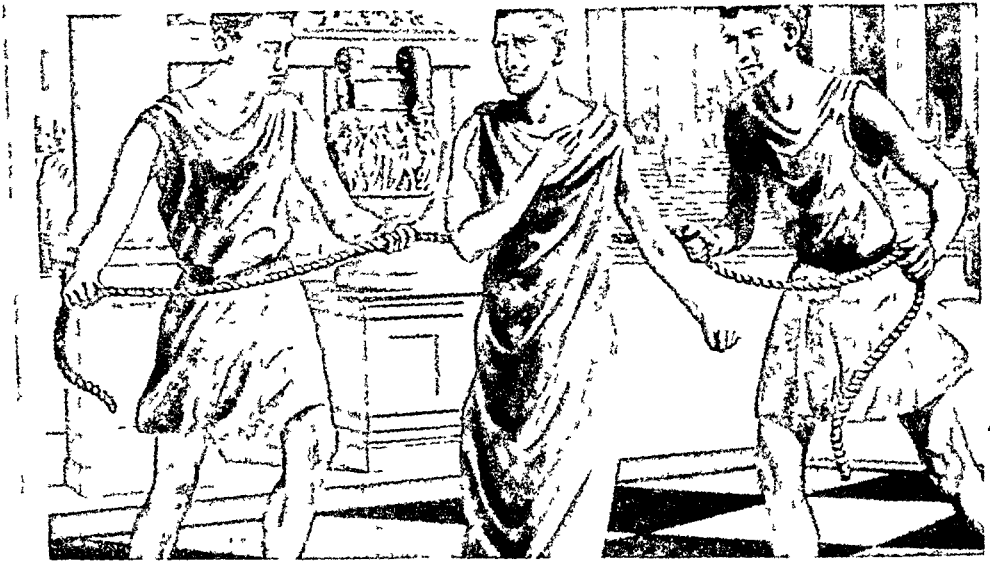
Then they were ruled by powerful nobles, but the poor people were hardly used, and complained that they did not know the laws. So a man called Draco was bidden to draw up laws that all the people might know. He drew up a long list of things that must not be done, but as the punishment for even the smallest wrong-doing was death—there was no other punishment at all—the people complained more bitterly than ever.

Then Solon, the wise Greek who visited the court of King Croesus, drew up more laws to stop the nobles ill-treating the people. As soon as he had finished them he went away for ten years, so that no one could make him alter his just laws.

Kings, Nobles and Tyrants.

Soon the people forced the nobles to give up their power, and strong men, called "tyrants," ruled instead. Some were good and some were bad. But still the Athenians were not satisfied. They had not found the right way of ruling their city.

Then at last they found it. They had been governed by kings, by nobles, and



Specially drawn for this work.

Slaves were sent out into the streets to collect more men for the assemblies. They took with them a rope smeared with red paint, and when this touched any man's garments it left a smudge of red. When he appeared in the assembly this red mark was noticed.

by tyrants—now they would govern themselves.

"Every citizen shall have his say when laws are made," declared the people. "If we want new temples built, or money spent, then each one of us shall go to the assembly and cast his vote for or against. We will hear what every man has to say!"

The Red Rope.

This was a splendid idea. We have not found a better one yet. Indeed, we have borrowed from Athens many of her greatest ideas and use them to this day.

Every citizen was supposed to be present at the assemblies that were held to decide city matters. If it happened that there were only a few men there, slaves were sent out into the streets to collect some more.

They did it in a curious way. They took with them a rope smeared with red paint, and when this touched any man's garments it left a smudge of red. When he appeared in the assembly this

red mark was noticed, and the man had to pay a fine for having to be roped in by slaves.

You may perhaps wonder how the Athenians managed to attend every assembly. It took up a great deal of their time, and besides this they had to worship in the temples, go to the theatre, listen to new poems and stories being read, and so on. How could they do all this, and attend to their own work as well?

It was not difficult, because hundreds of slaves lived in Athens and did all the housework, farm or garden work necessary. Foreigners looked after the trade of the city, and thus the Athenians were quite free to spend all the day talking of laws, beautiful things and games.

At Olympia.

The Greeks loved games and athletic sports. They liked to keep their bodies healthy and strong, and every boy was taught to run and jump, wrestle and throw. The most exciting time for the

Athenians and other states was when the time for the Olympic Games came round.

Every four years at Olympia these great contests were held. Men arrived from all the states around to try their skill at athletics, to read their poems, act their plays, show their pictures. The whole of Greece made holiday, and even wars were stopped whilst the Games were on.

Wreaths of wild olive were given to the victors, and very proud were those who wore them. When they reached their home state they were loaded with riches and honours, and every one praised them.

The Athenian Boy.

The little Athenian boy led a very

different life from that of the Spartan boy. He was taught to love beautiful things, and encouraged to write poetry, carve statues, or paint pictures. He loved music, and would listen to wonderful stories by the hour. He was taught to be clean and healthy, and he grew up strong and straight.

To School with his Slave.

At seven years old he went to school. A slave took him there, and sat behind him the day through with a long stick. If the little boy misbehaved himself and was naughty the slave struck him with the stick. He learnt to read, write and do sums, and he played plenty of games.

When he wrote he used a queer pencil called a "stylus," and he made marks with this on a wooden tablet coated



Specially drawn for this work

Every four years at Olympia great contests were held. Wreaths of wild olive were given to the victors, and very proud were those who wore them.

with wax, which was his slate. When he was allowed to use ink, he wrote with a dark liquid taken from cuttle-fish. His books were rolls of parchment coiled round wooden rollers.

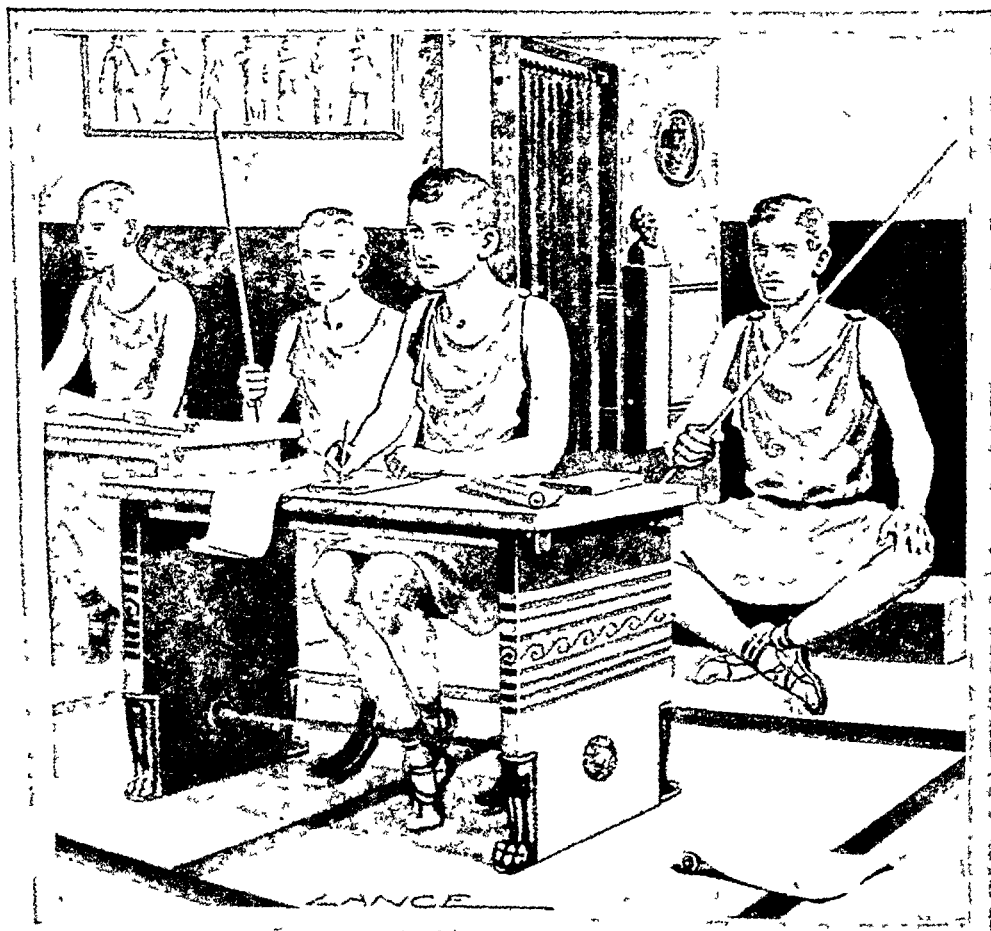
Proud of his City.

He grew up into a fine man, able to rule himself and his city well, loving all things beautiful and good, proud of his city, and eager to make her proud of him. It is no wonder that the fame of that little city state has come to us down the ages, for many of the greatest men in the world lived then, and we sing their praises to-day.

But how do we know these things? How is it possible to look back so many hundreds of years and construct a picture of the Greek boy as he was?

It is possible because, even in those far-off times, there were men who travelled and who set down in writing some account of the things they saw. Pausanias was one of these. He wrote a gazetteer of Greece in ten volumes, recounting all he had seen on his journeys.

Research among the ruins, the broken statues, the fallen temples and other remains has proved the truth of these ancient writings again and again.



At seven years old the Athenian boy went to school. A slave took him there and sat behind him the day through with a long stick. If the boy misbehaved the slave struck him with the stick.

Specially drawn for this work

THE BATTLE OF MARATHON



Specially drawn for this work.

Late in the summer, when the Ægean Sea was purple-blue and the sky was clear, the Persian fleet entered Marathon Bay, galley after galley.

KING DARIUS was very angry with the Athenians. They had dared to defy him and he meant to destroy the lovely city of Athens and slay every man in it.

So he prepared a vast army and built a great fleet to carry his soldiers across the sea to Greece. He had 100,000 men, all well armed, strong and powerful.

In the Bay of Marathon.

One morning, late in the summer, when the Ægean Sea was purple-blue and the sky was clear, the Persian fleet set sail for Greece. It was a wonderful sight to see it. Galley after galley went forth, and the watching Persians smiled to think of the dismay of the Athenians when they saw their great enemy.

The Persian fleet entered Marathon Bay, about twenty miles north-east of Athens. Soon the soldiers were being landed on the shore and were talking eagerly of marching to Athens and destroying it.

It was not long before the Athenians heard of the landing of this great host. What should they do?

There was only one thing they *could* do to save their beloved city, and that was to march off to the plain of Mara-

thon at once and fight the Persians there. But what hope was there for their small army against the Persians' vast host? The Athenians numbered 9,000 men and the Persians were 100,000!

The Athenian army started off for Marathon at once. They soon arrived at the top of the hill overlooking the plain on which the Persians were arrayed. The Athenians were dismayed to see their great numbers.

"We must send to Sparta for help!" they cried. "Where is Pheidippides, he who has won so many races at Olympia? Now let him run as he has never run before!"

Wonderful Pheidippides.

Pheidippides was brought before Miltiades the general.

"Run to Sparta and tell her to send help!" commanded Miltiades. "You have won the olive wreath at Olympia. Now win glory for Athens once again!"

Pheidippides went. Sparta was nearly 200 miles away, and the road was hilly and rough, but Pheidippides meant to reach it in two days. He scarcely stopped once, and before forty-eight hours had passed he ran panting into Sparta. He gave his urgent mes-

sage to the leaders and stood waiting for their reply.

"It is not our custom to move our army until the moon is full," said the Spartan chiefs. "We will come then."

It would be five days before the moon was full. Five days! And the Persians were already arrayed on the plain of Marathon!

The Brave Battle of Marathon.

The Athenians would have to fight the Persians without the help of Sparta. There was no time to wait. They stood on the hill-top, hoping for the help that did not come. But although Sparta disappointed the Athenians, there was a small city that did its best to help. This was Plataea, which had sent a noble little band of armed men numbering 1,000. Every man that Plataea had was sent. But, even so, there were only 9,000 Athenians, and on the plain below were 100,000 enemies. Ten to

one—it was no wonder the Athenians were in despair.

"There is only one way to attack the Persians," said Miltiades. "We must all throw ourselves upon them at once and try to put them to rout!"

This was a forlorn hope, for what could 10,000 do against 100,000? But the Athenians did as they were commanded. When the word was given they started running at full speed down the hill towards their startled enemies, who thought they must be mad. With a crash they threw themselves upon the vast host of the Persians and began to fight fiercely.

Towards the Sea.

The enemy were amazed and gave way. The two wings were forced back towards the sea, and only the centre held. The Athenians saw that their own centre needed help and left the wings to aid it. Soon the Persian line



Specially drawn for this work.

"Run to Sparta and tell her to send help!" was the command. Pheidippides went. Sparta was nearly 200 miles away, and the road was hilly and rough, but he meant to reach it in two days. He scarcely stopped once.



Specially drawn for this work.

Miltiades the general suddenly saw something gleaming on the top of a distant hill. It was a shield being flashed in the sun by a traitor, telling the Persians to attack Athens

was broken altogether and the men fled away hastily to the ships.

Victory for the Greeks.

The victorious Greeks captured seven ships and slew many thousands of Persians. They themselves only lost 200 men. Miltiades, the general, was overjoyed at his marvellous victory. Could it really be true that their dreaded enemy had been put to rout so easily and so completely?

Suddenly he saw something gleaming on the top of a distant hill. It was a shield being flashed in the sun by a traitor, telling the Persians to sail round the coast to Athens, whilst the city was unguarded, and attack it.

At once Miltiades resolved to march his tired men back to Athens and array them in battle order to greet the Persians when they arrived.

The Persians Sail Away.

It was twenty miles back to Athens, but the weary soldiers were not once allowed to rest on the way. Their city was in danger and they must save her at any cost.

And the next morning, when the Per-

sian ships sailed up and landed men to take Athens, what an amazing sight met their eyes! There, drawn up in battle-array, ready to fight once again, was the very same army that had so thoroughly defeated the Persians the day before!

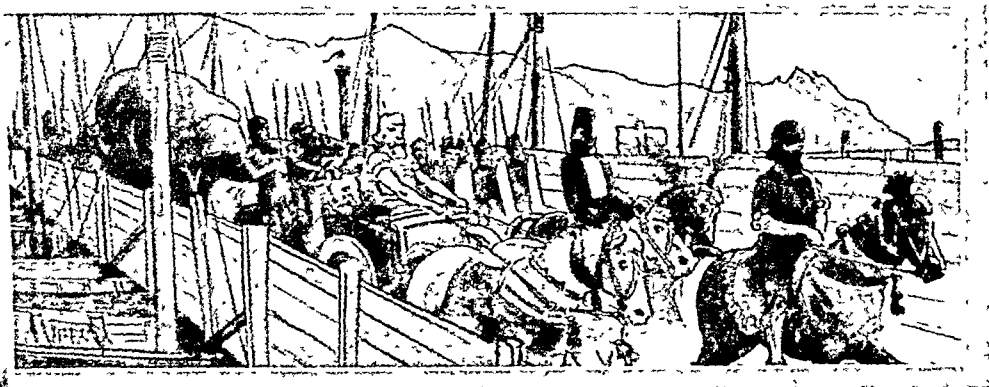
The enemy thought twice before venturing to march against the Athenians. They called off their men, set out to sea, and went swiftly back to Persia. The Greeks had put fear into their hearts, and it was a shamefaced fleet that sailed home again.

Honour for Greece.

Darius was very angry when he heard the result of the campaign. He vowed that he would get together an even greater army and utterly wipe out not only Athens, but the whole of Greece also.

But Greece was joyful. The news was sent to all the states, and every Greek exulted in the victory. The Athenians were greatly honoured and well did they deserve their glory and high praises. Certainly the Battle of Marathon gave them a confidence they never lost.

THE BRIDGING OF THE DARDANELLES



Specially drawn for this work.

Big walls were built up on either side of the bridges so that the horses and mules passing over should not see the water and take fright. At last the bridges were ready and the command given for the army to cross to Greece.

KING DARIUS began to collect together a vast army to defeat the Greeks who had routed his men at the Battle of Marathon. But before he could go to war he died. His son, King Xerxes, determined to go on with his father's work, and for four years made great preparations to invade the little city states of Greece.

How was he going to take his vast army over the sea to Greece? It was true that he had hundreds of ships, but so tremendous was his army that no fleet could carry it.

"I will bridge the Dardanelles," said Xerxes. "Then my men shall cross over the sea on foot."

The Great Bridges.

So master builders were set to work and bidden to build two long bridges over the sea to Greece. The Dardanelles, at the place chosen, were a mile across, so that it was a difficult task to undertake. The first bridges were destroyed by a storm, and Xerxes was so angry that he had the builders' heads cut off and commanded that the sea should be well whipped.

Then other builders were found, and once again the bridges were begun. How were they made?

To begin with, two lines of ships

were moored right across the Dardanelles. Then over these ships six great cables were tightly stretched, and on them were fastened strong beams of wood. On top of the beams brushwood was piled, and over this was a firmly trampled down layer of earth.

Big walls were built up on either side of the bridges so that the horses and mules passing over should not see the water and take fright.

An Army Marches Across.

At last the bridges were ready. One fine morning the command was given for the army to cross to Greece. King Xerxes had a great marble throne built for himself on a hillside overlooking the Dardanelles, and sat there, joyfully watching his vast host crossing the sea.

He was a proud king that day. Below him were about two million men, all owning him lord. On the sea great numbers of his ships sailed to and fro, and stretching right across to the distant blue shores of Greece were the bridges that he had had made.

Never had there been such a large army as that below him. There were long trains of baggage animals carrying their loads. There were soldiers of all kinds and of all countries. Some fought with knives, some with sticks, and some

even with lassos ! Then there were the wonderful Immortals—10,000 magnificent Persians, holding their lances downwards as they went, so that their silver and gold handles glittered dazzlingly in the sun. Their name, the Immortals, was given them because whenever one was struck down, another filled his place at once, and therefore their numbers were always the same.

There were splendid spearsmen on foot, and glorious cavalry men riding their horses proudly. They passed over the bridges to Greece and the long lines of moored ships groaned beneath their weight. Infantry and cavalry went by one bridge and baggage animals by the other. Day after day, night after night the army crossed the sea, and not until a week had gone by was the whole host across.

The Fleet of Xerxes.

Sailing with the army went Xerxes' fleet. Twelve hundred triremes he had, and 3,000 other ships. The triremes had three rows of oarsmen, one above the other, and it was hard and toilsome work to row the great ships along. Slaves were put to this work, and bitterly did they groan under the weight of the long, heavy oars.

In those days ships fought one another by ramming, and as the slaves were chained into their places in the ships most of them perished miserably whenever their vessel was rammed.

Two million men and over 4,000 ships to fight against a few small city states ! Xerxes meant to have a fierce revenge, and to destroy Greece so thoroughly that the whole world would tremble when it heard of what he had done.

Spies of the Greeks.

Greece was fearful when news of Xerxes' preparations came to the assemblies. The Greeks wanted to find out whether the rumours were true, so they sent out three spies. They found their way to the enemy's camp ; but, by



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misfortune, were discovered and hailed before Xerxes himself.

"So you have come to find out how big my army is?" he demanded. "Well, you shall see, and then you may go back to your countrymen and tell them, so that fear may fill their hearts and they will surrender humbly!"

The spies saw all the vast army and then hurried back to their leaders, terrified at what they had seen, but glad to escape with their lives.

A Ship with Corn.

Not long after the spies had been caught Xerxes was told that a ship, carrying corn to the people of Athens, was being chased and would soon be captured.

"Let her go free," said Xerxes. Then, seeing the amazement of those around him, he smiled.

"Athens will soon be ours," he said, "and we shall perhaps need that corn. So we will let the ship pass safely, knowing that the corn will belong to us before long."

Everyone laughed at the joke, and the little ship found herself free to go on her way unhindered, though her commander could never understand why.

On the Way to Battle.

The great army marched through Greece, growing bigger day by day as more men joined it. The big cities were made to provide food for the host, and sadly indeed did they complain at the task, for it almost ruined them.

Nor was this all. To get his fleet still nearer the scene of the invasion Xerxes actually cut a canal through the isthmus or tongue of land upon which Mount Athos stands. Traces of this canal you could discover to this day, showing in what a workmanlike manner the gigantic task was carried to its completion.

Then, when the Persians saw Mount Olympus in the distance, the order was given to camp on the shore, whilst the fleet lay near them on the sea. Soon the battle was to begin.



Specially drawn for this work

The Greek spies found their way to the enemy's camp, but were discovered and hailed before Xerxes himself. "So you have come to find out how big my army is?" the King demanded.

"Well, you shall see, and then you may go back to your countrymen and tell them."

THE BRAVE THREE HUNDRED



Specially drawn for this work.

The scouts who returned to King Xerxes told him what they had seen. "These Spartans are combing out their long hair and wrestling with each other. They always do that when they are going into battle to fight to the death."

KING XERXES meant to burn Athens and Sparta to the ground, and slay every man there, selling the women and children into slavery. But to get to Athens his army had to pass through very mountainous country. At one part it was necessary to go through a narrow pass, called the Pass of Thermopylæ. This was entered by a small path which had steep cliffs on one side and the sea on the other.

Then the road ran for about a mile between the sea and the cliffs, coming at last to another tiny path round the cliff like that at the entrance. After that the way was easy.

King Leonidas and his Spartans.

"If we can keep the Pass of Thermopylæ the Persians will not be able to come to Athens," said the leaders of the Greeks. "We will send soldiers there and they shall stop the Persians from coming any further."

So Leonidas, King of the Spartans, took 300 of his men and went to Thermopylæ. On the way others joined him, and when he arrived at the Pass he had 7,000 men with him. He found an old wall in the narrowest part of the Pass, and this he commanded to be rebuilt, so that if the Persians tried to

rush past him his men would have some defence.

The Coming of Xerxes.

Soon Xerxes arrived with his vast army. He was told that Leonidas and the Spartans were holding the Pass so that the Persians might not get through.

"He will not stay there long!" said Xerxes with a laugh. "All we need do is to camp outside the Pass and when Leonidas sees our tremendous numbers he will run away!"

But the Spartans took no notice of the great camp outside the Pass and Xerxes grew impatient. He sent scouts to see what the enemy were doing, and when they came back and told him what they had seen he was amazed.

"These Spartans are combing out their long hair and wrestling with each other," reported the scouts. "Their arms are stacked against the wall, and they took no notice of us, though we rode as near as we dared."

"These men are mad," said Xerxes.

"Nay, they are not," said one who knew the Spartans and their customs. "These Spartans always comb their hair and deck it when they are going into battle to fight to the death. Oh, Xerxes, if you can defeat *these* men you

will easily conquer the whole of Greece!"

Xerxes sent an angry message to Leonidas, bidding him surrender and give up his arms. Leonidas sent back a short fierce message—"Come and take them."

The Battle Begins.

Then the Persian king determined to destroy the Spartans utterly, and he sent a strong band of soldiers to fight them. As soon as the Spartans saw that battle was to be given them at last they rejoiced and went eagerly to the fray. But the Persians found the Pass so narrow, that only a few men could get by at a time, and these were at once killed by the waiting Spartans. Again and again the Persians tried to storm the Pass, but time after time they were driven back, hundreds of their number being killed, whilst not one of the Spartans was yet slain.

Xerxes was furiously angry. How dare Leonidas keep the Pass like this and force the great Persian army to camp outside, rapidly getting short of food?

"I will send my Ten Thousand Immortals against them," said Xerxes, "then they will soon be destroyed."

Fighting Becomes Fiercer.

Proudly the Ten Thousand marched against the Spartans. But since the Pass was so narrow they could not use the full force of their numbers. The Spartans were now enjoying themselves to the full, and played many a trick on the unwitting Persians. Often they would pretend to be overcome with terror, and would fly away down the Pass, with the Ten Thousand after them. Then they would turn on them, and in the narrow space would slay hundreds, giving no mercy and expecting none.

Three times that day did Xerxes leap up from his throne in terror, thinking that the Spartans were defeating his forces and destroying them completely.

The battle went on till night fell, and still the Pass was held.

A Cowardly Traitor.

Xerxes was in despair, when a cowardly Greek called Ephialtes came to him, and said that in return for gold he would lead the Persians by a secret path over the hills, and show them how they could enter the other end of the Pass, and fall upon the Spartans from the back. Joyfully Xerxes consented, and sent a large band of men off with the traitor.

Now Leonidas heard that he had been betrayed, and knew at once that defeat was certain. So he called all his 7,000 men to him, and told them that any man who wished to go might do so before the Persians came upon them. All left the Pass at once, with the exception of the brave 300 Spartans, whose law bade them either win or die. Soon the Pass was empty save for Leonidas and his wonderful little force.

His Wonderful Three Hundred.

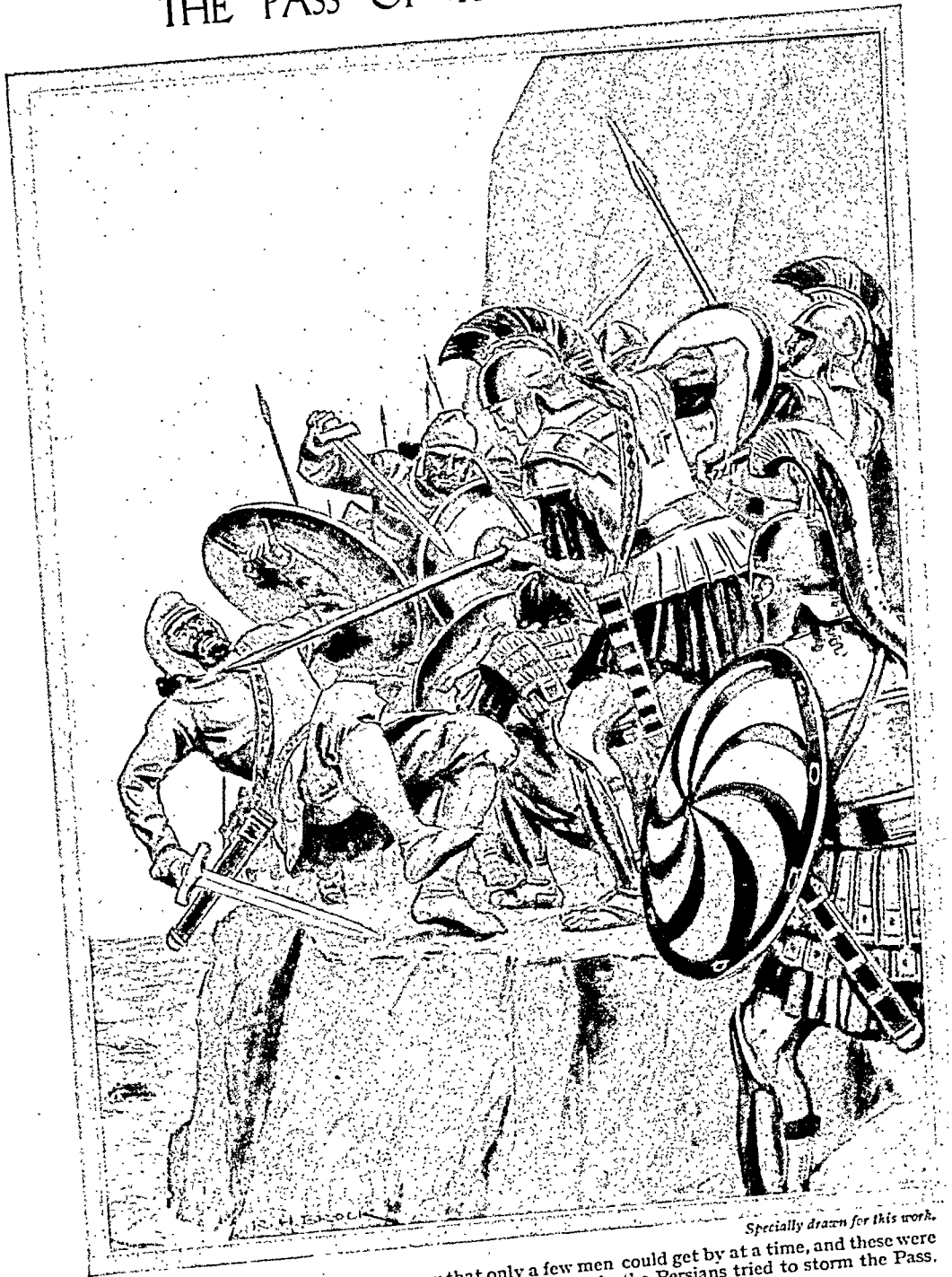
Leonidas did not mean to be caught in the Pass and slain easily. He gave the command to charge the whole Persian army! He and his force suddenly rushed out from the Pass and attacked the terrified Persians, who were so afraid of the Spartans that they had to be whipped on to the fight by their officers.

Again and again the Spartans charged the Persians, and soon hundreds were slain or drowned in the nearby sea. Then suddenly Leonidas heard a shout behind him, and turned to see the traitor leading the Persians up the Pass to attack him from the back.

Leonidas at once retired to a little hillock with the men he had left, and there made a last stand. The Spartans fought with spears, and when these were broken they drew their swords. At the last they had to use their bare hands, for even their swords were smashed.

One by one the Spartans fell. The

THE PASS OF THERMOPYLAE



Specially drawn for this work.
The Persians found the Pass so narrow that only a few men could get by at a time, and these were at once killed by the waiting Spartans. Again and again the Persians tried to storm the Pass, but time after time they were driven back.

Persians sent arrows, spears, javelins and stones against the brave little band, and shouted with joy as they saw it get smaller and smaller. What could stand against such an onslaught ?

To the Death.

Then at last not a Spartan was left. Of all that wonderful 300 nothing could be seen but a still and silent heap of dead. They had obeyed their law, and fought to the death.

Afterwards the Greeks put a stone lion on the spot where the Spartans

fell, and on it were carved these words for all the passers-by to read :

"Go tell the Spartans, thou that passest by,
That here obedient to their laws we lie."

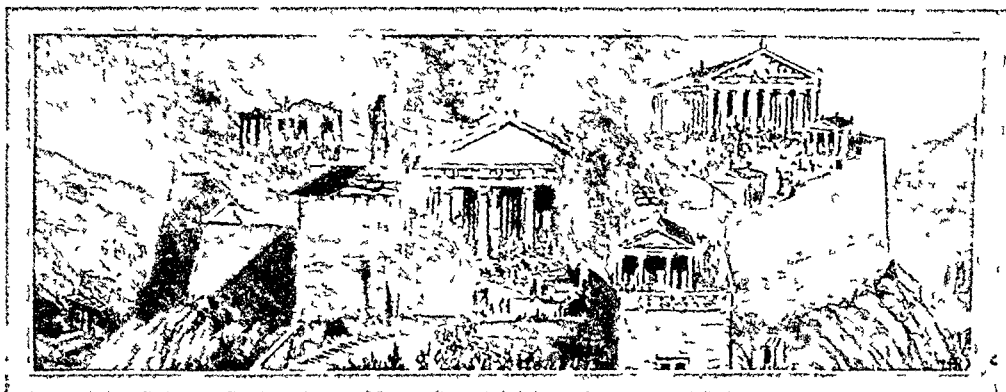
It will be seen, therefore, that in war on land the Spartans were supreme. All the years of harsh, brutal training through which the nation passed produced soldiers who were brave to the very point of death. At sea, however, the Athenians were superior fighters, as we shall soon be told.



One by one the Spartans fell. The Persians sent arrows, spears, javelins and stones against the brave little band, and shouted with joy as they saw it get smaller and smaller. What could stand against such an onslaught ?

Specially drawn for this work

HOW XERXES WAS DEFEATED



Specially drawn for this work.

Xerxes arrived at the empty city of Athens and set it on fire. He destroyed the citadel and slew the few defenders there. He cast down the statues and burnt the temples and soon not one stone was left standing upon another.

THE great fleet of Xerxes, the Persian King, sailed eagerly after the small Greek fleet, anxious to destroy it and to win their king's praise.

The people of Athens were in despair. Marching towards them was the vast army of the Persians, and round the coast was sailing the enemy's fleet. The Pass of Thermopylæ had been taken, and there was now nothing to prevent the Persians from destroying Athens.

"We must go across the Straits to the island of Salamis," said the Athenians. "We will leave our beloved city empty, and go back to it when the Persians have gone."

So ships took them across to the island, and from there they watched to see what would happen to Athens. All the young men went to fight on the Greek ships, but those on the island, the old men, the women and the children, knew that when smoke darkened the sky to the east it would mean that Xerxes had arrived, and was burning their beloved city to the ground.

Xerxes Takes Vengeance.

It was even as they feared. Xerxes arrived at the empty city and set it on fire. He destroyed the citadel and

slew the few defenders there. He cast down the statues and burnt the temples, and soon not one stone was left standing upon another. His vengeance was complete.

All that now remained to be done was to vanquish the small Greek fleet, and that should be easy, for the Persians had bigger ships and much greater numbers.

Meanwhile the Greek sailors had seen their city burning, and with bitter anger in their hearts longed to destroy the Persians in the same way.

The Battle of Salamis.

The Greek fleet was in the narrow Straits of Salamis, and it was decided that it should stay there, for the Persian ships were big and heavy and would find it difficult to fight in a narrow place.

The Persians soon sent ships to block up each end of the Straits, thinking that now the Greeks were well trapped in the narrow piece of water and could easily be defeated.

When Xerxes arrived on the shore of the mainland with his army, he commanded that the sea-fight should begin. He had a golden throne built for himself overlooking the Straits, and he meant to watch the battle and rejoice over the Greek defeat. By him were

scribes who were to write down all the brave deeds they saw.

'Midst Jammed Ships.

The morning of the battle dawned. Xerxes climbed to his golden throne, and at the same moment the first of the Persian ships sailed into the Straits of Salamis, to begin the battle. As they entered, the wind rose, and at once the heavy ships became difficult to manage. Themistocles, the Greek general, saw this, and gave the signal to attack at once.

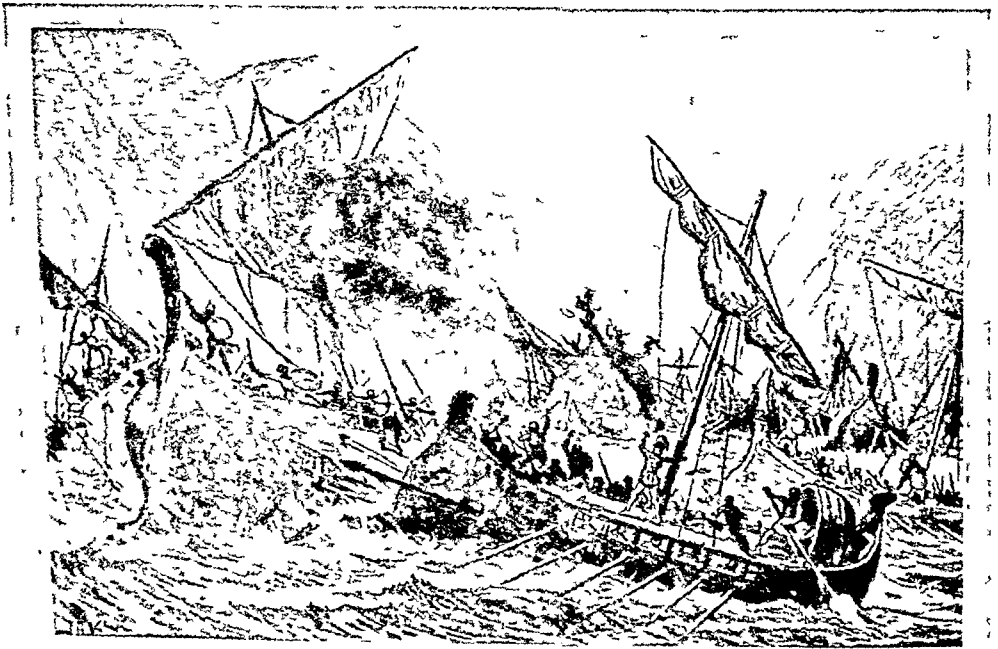
No sooner had the battle begun than the Greeks saw how wise they had been to stay in the narrow Straits and fight the Persian fleet there. The Persian ships soon jammed against one another and could not move. The Greek ships, smaller and lighter, found it easy to row up and ram them. Ship after ship of the Persians was sunk in this way, for the unhappy enemy could not take

their vessels away because of the numbers of their own ships pressing into the Straits from behind.

The crash of the iron ramming-heads was heard all day long. Shouts and groans, the gurgle of water, and the creaking of jammed ships floated up to the ears of the watching Persian King. He saw dozens of his ships sink and disappear. He watched them crush each other, fill and go down to the bottom. He saw the little light Greek ships sail here and there, and ram mercilessly. It was the worst day of his life.

Back to Asia.

When the day drew to an end the battle was over. The Persian fleet was utterly defeated, and all that the remaining ships wanted was to sail safely away to Asia as soon as they could. The Greeks had won the victory!



Especially drawn for this work.

The morning of the battle dawned. As the Persian ships entered the Straits of Salamis the wind blew and at once the heavy vessels became difficult to manage. The Greek general gave the signal to attack.



Specially drawn for this work

The Greeks sent to Sparta for help and got together an army of 100,000 men. The Persians attacked the Greeks and a fierce battle was soon raging.

Off went the Persian ships in the direction of Asia. Xerxes descended trembling from his throne, a terrible thought in his head. Suppose the Greeks should destroy the bridge he had built across the Dardanelles? What should he do? He had better return hastily, or he would be trapped in Greece, and perhaps these fierce, unconquerable enemies would kill him, the great Persian ruler!

Under Stern Orders.

Xerxes hurried back to the Dardanelles, leaving a general called Mardonius behind him, with 300,000 Persians and a command to conquer the whole of Greece before they returned.

When he came to where he had left the two fine bridges, he was horrified to find that they were gone! A storm had blown them to pieces. There was

nothing to do but to ferry his army across in boats, and a slow and laborious undertaking it was, very different from that grand day when Xerxes had sat on the hillside watching his two million well-trained men march boldly across to Greece.

Greece is Saved.

The army that Xerxes had left behind him marched on Athens again. The city had been rebuilt by the Athenians, and they were in despair when they saw the Persians coming again. Once more their city was burnt down, and they had to fly to Salamis. Then they sent to Sparta for help, and got together an army of 100,000 men, commanded by General Pausanias, nephew of that brave King Leonidas who fell so heroically at the Pass of Thermopylæ.

The Persians attacked the Greeks, and a fierce battle was soon raging. Then Mardonius, the Persian leader, was killed, and in fear and panic the Persians began to fly back to their camp. The Greeks pursued them, and soon the whole camp was taken and looted. All the Persians were slain save for a small company that escaped and fled back to Persia.

Persian Smoke.

On the same day that this battle was fought came the end of the Persian fleet which was running away to Asia. It arrived at a place called Mycale, where 60,000 Persians were encamped on the shore.

The men landed, and drew their ships up on the beach, building a rampart round them of stones and wood. Then up came the Greek ships, and the men landed nearby. They marched straight on the Persians, broke down the rampart, and defeated them com-

pletely. Then they set to work to burn the Persian ships.

Soon the black smoke was streaming on the wind. It was the end of the Persian invasion. Greece was saved, and very proud were the little city states as they set to work to build themselves up again. As for Athens, she was honoured by the whole of Greece, and her glorious name will never be forgotten.

By the "Long Walls."

It is certain, however, that the Persian invasion made the Athenians more eager than ever before to rank high among the nations of their time and to keep their proud position. To do this they had to be powerful at sea as well as on land, and so the port of Peiraeus was built and fortified as a harbour for Athens, and connected with the parent city by what were called the "Long Walls."



The Greeks marched straight on the Persians, broke down the rampart and defeated them completely. Then they set to work to burn the Persian ships and soon the black smoke was streaming on the wind. It was the end of the Persian invasion.

Specially drawn for this work.

*Alimari*

Here we have a photograph of the prison at Athens (once underground) in which Socrates was confined. When this wise man was seventy years old he was charged with trying to teach the young men new customs and beliefs. He was condemned and refused the offers of his friends to arrange his escape. He died from drinking a cup of hemlock which his gaoler brought him.

wanted to know what everything meant. He would not accept what other people told him as being true; he must think things out for himself and discover them.

He would ask people simple questions, such as, "What is justice?" They would reply as best they could, and then Socrates would press more questions on them, till in the end his hearers had to admit that they really had never thought exactly what justice was — they had only repeated other people's opinions.

Socrates Thinks.

But that was never enough for Socrates. He must find out all he could for himself, and often he would stand still and think for hours. Sometimes he would forget what he was

doing and would stand silent in the middle of the street, thinking deeply.

One day he stood for hours in the street, never moving, thinking all the time about some question in which he was interested. The people passed him and smiled. They knew Socrates. Night came and still the little man stood thinking.

"We will get out our sleeping mats and put them where we can see him," said the people. "We will watch how long he stands there!"

So they took their sleeping mats and lay down near the philosopher; but they were fast asleep before he had moved! Morning came and they awoke. Still the little man stood there, lost in thought. What a thinker he was, thought the people, marvelling.

At last, when the sun struck warmly

on his head, Socrates stirred. He had thought all round the subject in which he had been lost and found out what he wanted to know. He offered up a short prayer and went on his way, never knowing that he had been watched with wonder by so many people.

The Little Man Makes Enemies.

Socrates made many friends, who admired and loved him; but he also made enemies, especially of those who thought themselves clever, and were angry when Socrates showed that they were not as wise as they had imagined. The philosopher used to say that, whereas most people thought themselves wise, he at least knew that he was ignorant.

When he was seventy years old Socrates' enemies decided to act against him. So they took him and brought him before the judges, saying that he was trying to overthrow the old gods and teach the young men new customs and beliefs.

This was, of course, true, for Socrates wished men to depart from any old bad custom and take on new and good habits. He wanted people to leave behind evil and ignorance, and seek after goodness and truth.

Many of the judges who were to try Socrates admired him and did not wish to punish him. But the old man would not promise to stop his teaching, and said that all he wanted was to show people what was right and good

"Indeed," said Socrates, "I think that instead of punishing me you should give me a public feast in return for all the good I have done in Athens!"

That made the judges angry and they decided that he should die by poison. So the wise old philosopher was taken to prison, where his friends visited him, grieved and anxious.

But Socrates was not afraid.

"Who knows whether life or death is better?" he said.

"I will bribe the gaoler and you can escape," said one who loved him.

"No," said Socrates, "I will not save myself by breaking the law."

Then the time came for the gaoler to bring the great thinker the cup of hemlock poison to drink. Socrates took it and drank it as if it were a cup of wine. His friends wept and turned away their heads.

The Death of Socrates.

Soon Socrates spoke. He had remembered that he owed a cock to someone, and he begged his friends to see that the debt was paid. After that he spoke no more. The great Greek philosopher was dead, killed by his own countrymen.

Socrates wrote no books, but his great friend and disciple, a man called Plato, wrote some wonderful books in which he set out the things that Socrates tried to teach. Perhaps some day you will read them.



ALEXANDER THE GREAT



Specially drawn for this work

King Philip of Macedon swept down upon the Greek city states, and made himself overlord. He had gained what he wanted and was master of Greece. No Greek army would dare to stand against the famous Macedonian phalanx.

TO the north-east of Greece lies a little land called Macedon, and from this mountainous country came one of the greatest kings the world has ever seen—Alexander the Great.

His father was King Philip of Macedon, a strong and clever man. When he came to the throne he saw that although his people were not much more than rough shepherds, they might be made into wonderful fighting men.

He set to work to train them, and soon he had one of the finest fighting forces of that time. He invented a new way of fighting called the Phalanx. This was a mass of foot soldiers, heavily armed, arranged in sixteen rows. They were packed as closely as possible and had spears so long that even those belonging to the fifth row stuck out beyond the front line.

Master of Greece.

Philip waited until the Greek city states began to quarrel among themselves and then he swept down upon them and made himself overlord. He had gained what he wanted and was master of Greece. No Greek army would dare to stand against the famous Macedonian phalanx.

He was not a harsh master, for he loved and admired all things that were

Greek. Besides, he had a great idea which he soon put before the sulle Greeks.

"Come with me to Persia," he said. "I will take a great army there and will revenge ourselves for the time when the Persians invaded Greece. We will take treasure cities, and gain an empire greater than any that has been founded in history!"

But before Philip could follow out his ideas he was killed. His son, Alexander, a youth of twenty, was made king, and the Greeks thought that they would hear no more of the bold plan that Philip had put before them.

Alexander's Boyhood.

But they were mistaken, for Alexander was even greater than his father.

He had been brought up almost like a Spartan boy. He had learnt to be hardy and strong, and knew how to ride, swim, wrestle, run and fight. He had heard the old stories of Greece and loved Greek customs and manner. He was handsome and very strong and as brave as a lion. If he meant to do something he did it. He was always lucky, always bold and daring.

He used to sulk when he heard news of his father's victories.

"Will my father leave nothing for

ALEXANDER'S HORSE, BUCEPHALUS



Specially drawn for this week.

The horse was glossy black, with a white star on its forehead, and was beautifully shaped. The animal was brought to the King's grooms and they tried to mount it. But it would not let them and began to plunge and rear savagely. "The horse is vicious," said King Philip, displeased. "I will not buy him. Take him away."

*Specially drawn for this work*

Alexander, the youthful prince, caught hold of the bridle. He spoke to the horse softly and stroked it caressingly. Then he threw off his cloak and leapt on to the animal's back. The court watched in amazement and the powerful beast galloped on swiftly.

me to do when I am a man?" he said. "Why does he want to march against the Persians and conquer them? I want to do that!"

The Beautiful Horse.

One day, when Alexander was sixteen, a man from Thessaly appeared at the court and craved permission to speak to Philip.

"I have brought with me a magnificent horse," said the man. "Will you buy him? I want two thousand six hundred pounds for him, for there is no horse in the world like him."

Now Thessaly was famous for beautiful horses, so Philip commanded the man to bring his horse before him. He did so, and everyone cried out in wonder to see such a glorious animal.

It was glossy black, with a white star on its forehead, and was beautifully shaped. Philip told the man he would buy the horse, but first he wished to see if its temper was good.

So the animal was brought to the

king's grooms, and they tried to mount it. But it would not let them and began to plunge and rear savagely.

"The horse is vicious," said Philip, displeased. "I will not buy him. Take him away."

Now Alexander was sitting at his father's side whilst the horse was being tried. He loved horses and thought this one was the finest he had ever seen. He could not bear to see it roughly used by the grooms, and when it was led away he burst into speech.

Alexander Speaks.

"What a pity to lose such a beautiful horse for want of skill and courage to manage it!" he said.

Philip paid no heed to the boy, so Alexander repeated his words. Still his father paid no attention, and a third time the youth spoke, even more loudly. No one took any notice of him, for all thought it wrong for a mere boy to push himself forward in such an unmannerly way.

Alexander grew angry and repeated

the same sentence over and over again, until at last his father looked at him in wrath.

"Perhaps you could manage the horse yourself," he said scornfully and mockingly.

"I could!" said Alexander, flushing somewhat.

"Well, you may try!" said Philip. "But what will you pay me if you cannot?"

"The price of the horse!" cried Alexander, boyishly, and ran after the animal.

Alexander and Bucephalus.

He caught hold of the bridle, and turned the horse to the sun, for he had seen that the animal was frightened of its own shadow. Then he spoke to it softly and stroked it caressingly. Gradually the horse became quiet and stood still.

Alexander threw off his cloak and leapt on to the animal's back. He had no whip and no spurs, so he simply pulled lightly at the reins. The horse began to gallop.

All the court watched in amazement, and as they saw how marvellously fast it could go they held their breath in wonder. Here was a horse fit for a king!

The powerful beast galloped on

swiftly, and Philip wondered uneasily whether Alexander was strong enough to pull him up and bring him back. Almost as he wondered the horse turned, and Alexander galloped back again. Everyone stood up and cheered wildly, amazed and delighted. The horse was trembling with excitement, but it was no longer ill-tempered and unmanageable.

King Philip embraced the daring boy with tears in his eyes. "My son," he said, "you must certainly find another kingdom more worthy of your greatness, for Macedon will after this be too small for you!"

To a Horse's Memory.

Alexander took the horse for his own, and called him Bucephalus. He loved him greatly, and took him with him into many a battle. When at last the brave animal died of wounds, Alexander grieved greatly, for he had loved him like a friend.

He built a city in memory of the horse, and called it Bucephala, after him.

Macedon was, of course, a most important country in the times of which we write and was famous for its vineyards, its salt, and its gold and silver mines. It was at the height of its fame in the days of Alexander.



Specially drawn for this work

Alexander accepted the horse for his own and called him Bucephalus. He loved the handsome creature greatly and took him with him into many a battle.

HOW ALEXANDER WON HIS EMPIRE



Specially drawn for this work.

Alexander gave the order to advance, and himself led his small army into the river. In spite of clouds of arrows, the Macedonians managed to climb up the opposite bank, where they began to fight fiercely with the Persians, hand to hand.

ALEXANDER meant to become an even greater man than Philip his father. He wanted to win a larger empire than had ever been won by a king before. He longed to capture treasure cities and take their gold.

One day he set out with his small army to conquer as much of the then-known world as he could. Greece was already his, and he determined to add Persia to his empire next.

Darius Prepares an Army.

At that time the King of Persia was one, Darius, who thought that it would be easy to repel the Macedonian and his small force of well-trained peasants. So Darius got together a great army, and drew them up on one side of the River Granicus to prevent Alexander from coming any further.

When Alexander arrived he gave the order to advance, and himself led his small army into the river. In spite of clouds of arrows, the Macedonians managed to climb up the opposite bank, where they began to fight fiercely with the Persians, hand to hand. As soon as they had a chance they formed their famous phalanx, and cut right through the enemy's lines.

The Persians were not used to this kind of fighting, and fled in terror. In

a short time Alexander found that the way to Asia lay open before him. Onwards he marched triumphantly and city after city surrendered to him.

The Gordian Knot.

At last the conqueror came to a place called Gordium, and in the citadel he saw an old waggon, whose harness pole was fast knotted to the yoke. When he asked what it was there for, he was told that the Oracle had said that whoever should undo the knot would become king of all Asia.

Now this was just what Alexander had made up his mind to be—but a glance at the knot showed him that it was impossible to untie, so tight it was and strong. Whereupon he raised his sword and cut the knot in two!

"The Oracle did not say *how* the knot was to be undone!" he said.

Darius Fights Again.

Soon Darius raised another army and came to meet Alexander. But because of a dream the Persian King sent his men through a narrow mountain pass to meet the Macedonians. Alexander was delighted when he heard this, and at once set out to hem the Persians in between the sea and the mountains, so that they could not fight properly.

The Persians were soon forced back. King Darius was watching from his chariot, high above his men. Alexander saw him, and made his way towards him thinking to capture him. In the greatest fear Darius suddenly jumped down from his chariot, leapt on a horse and fled away. This was the worst thing he could have done, for his army at once began to take flight also, thinking that they were defeated. The victory once more went to Alexander.

The Dreadful War Chariots.

He went on his triumphant way again. Through city after city he marched, all of them submitting to him, and owning him lord. Down to Egypt he went, and made himself master there, founding the famous city of Alexandria.

Then he heard that Darius had once again gathered an army together and he marched northwards to meet it.

Darius had some fearful war chariots with him with which he hoped to win a great victory. The wheels were fitted with sharp scythes, and when the chariots were driven headlong into the enemy the barbarous knives mowed them down mercilessly.

But Alexander made swift plans to prevent the war chariots from doing harm.

"When the chariots come forward," he said to his leaders, "kill the drivers with arrows. Then let my strongest Macedonians seize the reins of the horses and stop them before the knives can do any harm. If there are chariots whose drivers are not killed, let the



Specially drawn for this work

The Persians were not used to the kind of fighting adopted by the Macedonians and fled in terror. In a short time Alexander found that the way to Asia lay open before him.

lines of men open out before them, so that they will gallop past without doing any harm."

To Guard their King.

Thus he prevented the fearful war chariots from being of use to Darius. The Persian King was once more seated in his chariot high above his men watching the battle. Suddenly he saw Alexander coming towards him again, mowing down the Persians who tried to guard their king.

In terror Darius did as he had done before—he sprang on to a horse and fled away. Alexander caught him some

time later, but it was a dying man he found, for Darius had been stabbed by one of his own subjects. In pity the conqueror flung his cloak over the defeated king and sent his body to his weeping mother for burial, for Alexander was always chivalrous to a fallen enemy.

Treasure Cities.

Now Alexander became Lord of Persia, and claimed the vast empire for his own. He at once marched to the treasure cities and took their fabulous wealth. Babylon, Susa and Persepolis were three of the richest. The conqueror loaded 5,000 camels and 20,000 mules with treasure from Persepolis, and became the richest king in the world. He sat on the golden throne that had belonged to the Persian kings, and felt himself an emperor indeed.

Wealth and Glory.

But still he longed for more lands to conquer and he marched to India. There he won many victories, but when he wished to go on still further, his Macedonians refused. They wanted to go back to their own little country and enjoy the wealth and glory they had won.

Alexander gave in, and they marched back joyfully. But it was a long and weary way, and a quarter of the army died from thirst and sunstroke.

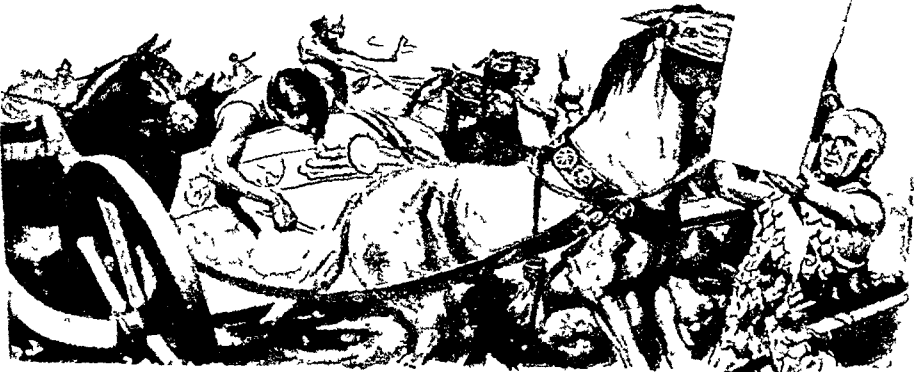
The Death of Alexander.

The great conqueror had many fine ideas. He planned that Western and Eastern peoples should settle peacefully side by side in cities that he built. He wanted the good and noble customs of the Greeks to replace the cruel and harsh traditions of the Persians. He longed to make his great empire so strong and firm that it could never go to pieces.

But all his great plans came sudden end. He fell ill and soon that he was dying. He was only two years old, and yet he had an empire greater than any of had been able to win before history of the world.

When his soldiers knew that he was dying they begged to see him again. In single file they came to his bed. Alexander gave his hand to them and the

It was a terrible thing that Alexander died so young. Before many of the wonderful things he had conceived could be carried out.



"When the chariots come forward," said Alexander to his leaders, "kill the drivers with arrows. Then let my strongest Macedonians seize the reins of the horses and stop them before the sharp spears which are fitted to the wheels can do any harm."

Specially drawn for this work

LOOTING A CITY OF TREASURE



Specially drawn for this work.
Alexander became Lord of Persia and claimed the vast Empire for his own. He loaded 5,000 camels and 20,000 mules with treasure from Persepolis and became the richest king in the world. He sat on the throne that had belonged to the Persian kings and felt himself an emperor indeed.

tion His own heir was little more than a baby, and among his ministers and the members of his court was not one man sufficiently clever and powerful to carry forward to its fruition the work which was so tragically stopped with the passing of the genius who had planned it.

Like One Vast Nation.

We must remember that the world in Alexander's period was much smaller than it is to-day, for the simple reason that a great deal of the land surface of the universe was then

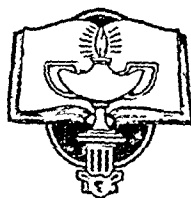
undiscovered. At the same time his idea for conquering the whole of the then-known world, and forming its peoples into one vast nation under his rule came from the mind of a truly remarkable man, and the nearest approach to its fulfilment exists in the British Empire, upon which "the sun never sets."

Nor must we forget that Alexander did not merely conquer. Wherever his victorious armies marched he sought to establish trade and improve the outlook of those who owed allegiance to him.



When his soldiers knew that Alexander the Great was dying they begged to see him once again. In single file they walked sadly by his bed. The Emperor feebly raised his hand to them and then died.

Specially drawn for this work



THE VINTAGE FESTIVAL

Rischgitz

The picture above, painted by the Anglo-Dutch artist, Sir Laurence Alma-Tadema (1836-1912), shows the high state of art and refinement reached by the populace of Ancient Rome. The vintage festival was held to celebrate the gathering-in of the grape harvest. The City of Rome and its mighty Empire were founded by Romulus, who gave them his name. Romulus and his brother Remus were miraculously spared after being cast upon the River Tiber and were brought up, first by a wolf and then by a shepherd and his wife.

THE STORY OF ROMULUS AND REMUS

LONG ago there lived a king called Numitor who ruled over a little state called the Long White City in the land that we now know as Italy. He had a brother named Amulius who hated him and wanted the throne for himself.

He plotted against Numitor and drove him away. Then he made himself king in his stead. But Numitor had two sons and a daughter, and Amulius was afraid the boys might grow up and try to get their father's throne from him. So he gave orders that they were to be killed, and the daughter Silvia was to be shut up in a temple where no one would marry her.

The boys were slain, and Silvia was sent to the temple. Amulius then felt safe and gave all his thoughts to the ruling of the city.

But Silvia did marry, and soon twin sons were born to her. She was delighted with them and loved them very dearly.

One day Amulius heard of them and fell into a rage. He called his servants to him and bade them fetch the boys and give them to the River Tiber.

The Twin Boys.

The servants ran off. Silvia was flung into prison weeping bitterly for her two babies who had been torn from her arms. The men took the children to the river to drown them.

The Tiber was swollen, and rushed by swiftly, for there had been great storms. The men looked at the helpless babies and were sorry for them.

"We will make a basket of rushes



Specially drawn for this work

Silvia, the princess, was flung into prison, weeping bitterly. Her two babies were torn from her arms and the men took the children and went to the River Tiber to drown them.

for them, and push them out on the water in it," said one of the men. "We can then tell the king with truth that we have given the children to the river."

Saved by a Tree.

They did so, and watched the basket of rushes float away on the dark waters. Then they hastened back to Amulius and told him that they had done his bidding.

The swollen river bore the little basket along quickly. Soon it became caught against a fig tree, and the lower

branches held it tightly. When the river went down to its usual level the basket lay there in the tree high and dry.

The babies were safe, but they were very cold and very hungry. They began to wail loudly, but there was no one to hear them. Shepherds were the only people who lived in that district, and none was nigh at that moment.

A hungry wolf heard the wailing cries and pricked up her ears. She bounded out from her lair, and ran down to the river, sniffing. Soon she caught sight of the rush basket high up in the tree, and with a leap she brought it down.

She sniffed the little pink things and licked them. She was just going to eat them when the babies began to cuddle against her warm fur, for they were very cold.

The wolf had had some cubs of her own not long before, that had been stolen from her by a hunter. She had missed them and longed for them, and the feel of these two tiny cuddlesome things reminded her of her lost little ones. Swiftly she bent over them, and licked them again. She would take them for her own!

She carried them one by one to her lair and laid them carefully down. Then she lay by them and warmed them. She fed them and licked them clean, and the babies were happy and loved her.

The Shepherd's Discovery.

The little boys grew strong and healthy. They played about in the wolf's lair and laughed and crowed.

One day a shepherd heard them, and looked to see what made the noise. He was amazed to see two bonny boys, and picking them up he took them home to his wife.

"We will keep them!" she said in delight. "They may be the sons of Silvia who were supposed to be drowned in the river. We will call them Romulus and Remus and bring them up as our own sons!"

So the two boys grew up as shepherd lads, and did not know that they had any other mother or father but the shepherd and his wife. The man was employed by King Amulius, and that cruel king would have been greatly surprised had he known that two of his shepherd lads were no other than his own great-nephews.

King Amulius is Punished.

One day Numitor, who lived on a hill near King Amulius, saw Remus, and wondered at the boy's great likeness to his beloved daughter Silvia. He questioned him, and soon he had put together the whole story. In joy he called for Romulus to come to him too, and it was not long before the two headstrong youths vowed to take their mother from prison, put their wicked great-uncle to death, and give their grandfather Numitor his throne once again.

This they did, and soon the cruel Amulius was slain and Numitor once more sat upon his throne. Their mother Silvia was overjoyed to see them, and could not believe her eyes when they flung open the prison door and called to her.



Specially drawn for this work.

The wolf ran down to the river, sniffing. Then she discovered the babies; and, one by one, carried them to her lair and laid them down carefully.

"We will build a city for ourselves," then said Romulus and Remus. But they could not agree which place to choose. Romulus chose one hill, and Remus another. At last they asked the people to choose between them and everyone chose Romulus.

The Founding of Rome.

In anger Remus watched his brother marking out the borders of his new city. He sneered at him when he saw the first walls being built.

"See what a stupid wall you have built!" he cried, jumping over it.

"What will you do when your enemies come and leap over it too, Romulus?"

Then Romulus lost his temper and struck at his brother with his sword. Remus staggered back and then fell to the ground dead.

On the Tiber's Banks.

Romulus finished his wall, and built his new city alone. It stood on the banks of the River Tiber, and Romulus saw the ships sailing up to bring goods to his fine new city.

"It shall be called Rome, after my own name," he said proudly. Thus

was the new city named, and in future days it was to become so great that all men spoke of it in fear and wonder.

For the killing of his brother Remus, Romulus paid no penalty, but proceeded indeed to greater heights of power and popularity. When he died it was believed by the Romans of his day that he was carried to the skies in a chariot that was all ablaze with fire; and that, in the heavens, he met Mars the god of war.

Truth to tell, Romulus himself was made a god, being re-named Quirinus, and was worshipped by the people.



Their mother, Silvia, was overjoyed to see Romulus and Remus. She could not believe her eyes when they flung open the prison door and called to her. It was a most wonderful meeting.

Specially drawn for this work

HOW HORATIUS KEPT THE BRIDGE



Specially drawn for this work

Terrified people from the looted villages fled to Rome with what belongings they could save. They poured in at the gates driving before them their cattle and sheep, weeping bitterly as they told their tale. "You are safe in Rome," said the Romans.

IN the early days of Rome there ruled a king called Tarquin, whom the people hated. At last they drove him away and vowed that they would have no more kings.

But Tarquin meant to get back his crown, and he went to a powerful king called Lars Porsena, and begged for help. The king listened, and soon promised to lead a great army against the Romans and take the city for Tarquin.

Lars Porsena Marches on Rome.

In a short time the army was on the march. Shields and spears glittered in the sun, and frightened villagers fled before the oncoming soldiers. Lars Porsena burnt and looted every village he came to, and the terrified people fled to Rome with what belongings they could save. They poured in at the gates, driving before them their cattle and sheep, weeping bitterly as they told their tale.

"You are safe in Rome," said the Romans. "Our city has strong walls around it, and on one side is the River Tiber, swift and strong."

One wooden bridge crossed the Tiber, and beyond this was the strong fortress of Janiculum guarding the approach to

the river. The bridge was very narrow and would only take three people abreast.

"Citizens, to Arms!"

The Romans went up on house-tops and hills to watch for the enemy. Soon a cry went up:

"They come! They come! Their shields are shining and their spears glittering. To arms, citizens, to arms!"

Cattle were quickly driven in from the fields outside the city. The gates were fast shut, and the excited people waited for the enemy to draw near. The armed men in the fortress of Janiculum kept a sharp watch and made themselves ready for the fight.

On came the soldiers of Lars Porsena and set upon the fortress. It was not long before the Romans there were defeated and then the way to the bridge and to Rome lay open. Who could warn the Romans of their danger?

Some of the men from the fortress ran out and raced towards the bridge, followed by the enemy. But the Romans reached the bridge first and fled over it into the city, panting.

"The enemy are coming!" they cried. "The fortress has fallen! Soon

Lars Porsena will cross the bridge and enter the city!"

A council hurriedly met by the river gate.

"We must hew the bridge down," said the Consul. "Then the enemy cannot enter the city."

Who Will Keep the Bridge?

But as he spoke the sound of war trumpets came across the plain, and the foe began to march towards the bridge.

"They will be upon us before the bridge is down!" said the Consul. "The town is lost!"

Then someone cried out in a loud voice:

"Hew down the bridge with all speed, Sir Consul. I and two others will hold back the foe!"

So spoke brave Horatius, the captain of the gate. If only the bridge could be held whilst men hewed down the under part perhaps there would be time to keep the enemy back. The bridge was

so narrow that three men could easily keep a thousand at bay.

"Who will keep the bridge with me?" asked Horatius.

"I will!" cried Spurius Lartius.

"And I will!" cried Herminius.

The three brave Romans ran across the bridge to the other side, just as the enemy came up. Behind them arose a great noise of hammering. Everyone caught up axe, hammer or hatchet and eagerly began to chop and hew at the bridge to get it down before the foe could cross.

Keeping the Bridge.

The enemy were surprised to see three men keeping the bridge against them, but they soon saw what was happening. Three chiefs rode out against the three Romans and a fierce fight was soon raging. When it ended two of the foe were lying slain on the bridge and one was in the river below.

Three more of the enemy came forward, and others behind them, pressing



"Hew down the bridge with all speed, Sir Consul. I and two others will hold back the foe!" So spake brave Horatius, the captain of the gate. The sound of war trumpets came across the plain and the foe began to march towards the bridge.

Specially drawn for this work

HORATIUS HOLDS THE BRIDGE



Specially drawn for this work.

The three brave Romans ran across the bridge to the other side, just as the enemy came up. The enemy were surprised to see three men keeping the bridge against them. Three chiefs rode out against the three Romans and a fierce fight was soon raging. Behind the defenders arose a great noise of hammering. Everyone eagerly began to chop and hew at the bridge.

close. The three Romans had to fight with all their might to keep the enemy off the bridge. Horatius was wounded, but he cared nothing for that.

The Bridge Falls.

All at once shouts came from the bridge behind the heroes.

"It breaks! It breaks! Come back before it is too late!"

Spurius Lartius and Herminius ran back lightly and reached the other side safely; but Horatius would not stir from his post.

"Not until the last plank is gone will I leave!" he cried.

Then, with a tremendous rending and tearing, the bridge broke and fell into the swift river below. The water carried away the planks and props. Rome was saved!

Rome's Great Hero.

Horatius heard the bridge break and saw it fall. He was left on the other side, with the enemy. What could he do?

"Surrender yourself!" cried Lars Porsena. But Horatius paid no heed. Instead, he shouted loudly to the swift-flowing river.

"Father Tiber!" he cried. "Take a Roman's life in charge to-day!"

Then, all wounded and weary as he was, and weighted with heavy armour, he leapt into the strong river. The Romans cried out in fear and watched breathlessly to see what would happen to their hero. Even Lars Porsena prayed that such a brave man might reach safety.

Then suddenly the Romans saw him, near to the bank where they stood. With tears running down their cheeks they drew him out of the river and, carrying him on their shoulders, loudly proclaimed him the hero of Rome.

Three Fighting Brothers.

Perhaps it is not to be wondered at that Horatius was such a brave man. Among his ancestors had been three brothers, all named Horatius, and born at the same time.

They were matched in combat against three brothers on the enemy side, also of triplet birth. At the start of the fight two of the brothers Horatius were killed, but the third fought on valiantly until he had vanquished the entire trio of his terrible foes.



Specially drawn for this work
"Father Tiber!" cried Horatius, "Take a Roman's life in charge to-day!" All wounded and weary as he was, and weighted with heavy armour, he leapt into the strong river. The Romans cried out in fear and watched breathlessly to see what would happen to their hero.

CORIOLANUS, THE ROMAN EXILE



Specially drawn for this work

The Romans turned upon the Volscians and soon had them on the run for the city gates. "The gates are open!" cried Caius. "Let us enter and capture the city!"

THE Volscians and the Romans were at war with one another. The Romans marched to the city of Corioli and encamped around it. It was the enemy's capital and they hoped to take it. But before they had done so another army came marching over the plains against them, and the Romans had to divide their force into two, sending one half to fight the new enemy and keeping the other to besiege Corioli.

Suddenly, when half the army was far away, the gates of Corioli were flung open and the Volscians rushed out to fight. The Romans were surprised and dismayed, and began to run away. But one man, Caius Marcius, stayed them with his stentorian voice and commanded them to fight their foe.

The Romans turned back upon the Volscians and soon had them on the run for the city gates.

"The gates are open!" cried Caius. "Let us enter and capture the city!"

Caius receives a New Name.

The Romans poured into the city and soon it was taken. Then Caius, despite his wounds and weariness, rode after the other half of the army that had gone to meet the new foe. He overtook them and fought so bravely that victory soon came to the Romans once again.

"How shall we reward this brave man?" said the Romans proudly. But Caius would take no reward.

Then the Romans decided to give him a new name so that everyone should know and remember his bravery at the taking of Corioli.

"He shall be called Coriolanus, after the town he took!" they said. And so it was: Caius Marcius became Coriolanus, the man who captured Corioli.

Coriolanus is Exiled.

Coriolanus was a rich nobleman, a patrician of Rome, who helped to rule the people. But although he was loved and admired by his friends, the common citizens hated him. He was haughty and proud, and disliked the people, who soon forgot that he had once been so brave.

There came a time when food was scarce in Rome. Then, to the joy of the people, they heard that a great deal of corn was being sent to the city. They felt certain that they would be given some, and they crowded round the Forum where the patricians were talking of the gift of corn.

"The people are getting too powerful," said Coriolanus. "We will not let them have the corn as a gift. They must buy it at a high price and that

will punish them for their misbehaviour."

When the people heard this they were very angry, for they were hungry.

"This is treason!" they cried. "Coriolanus wants us to starve, and that is treason to the republic of Rome! Let him be tried by the people and punished!"

So Coriolanus, the proud and haughty patrician, was tried by the angry people and sentenced to be exiled from Rome.

The Exile's Revenge.

This was a terrible punishment to Coriolanus. It meant he must depart from Rome for ever and leave his mother, whom he loved best in the world, and his fair young wife and two little sons. With bitterness in his heart he passed out of the gates of Rome, vowing revenge on the people.

He went to his old enemies, the Volscians, whose town he had once taken, and offered to lead an army against the Romans if they would give him one.

"Rome shall be yours," he said. "You shall do with her what the Romans once did with Corioli."

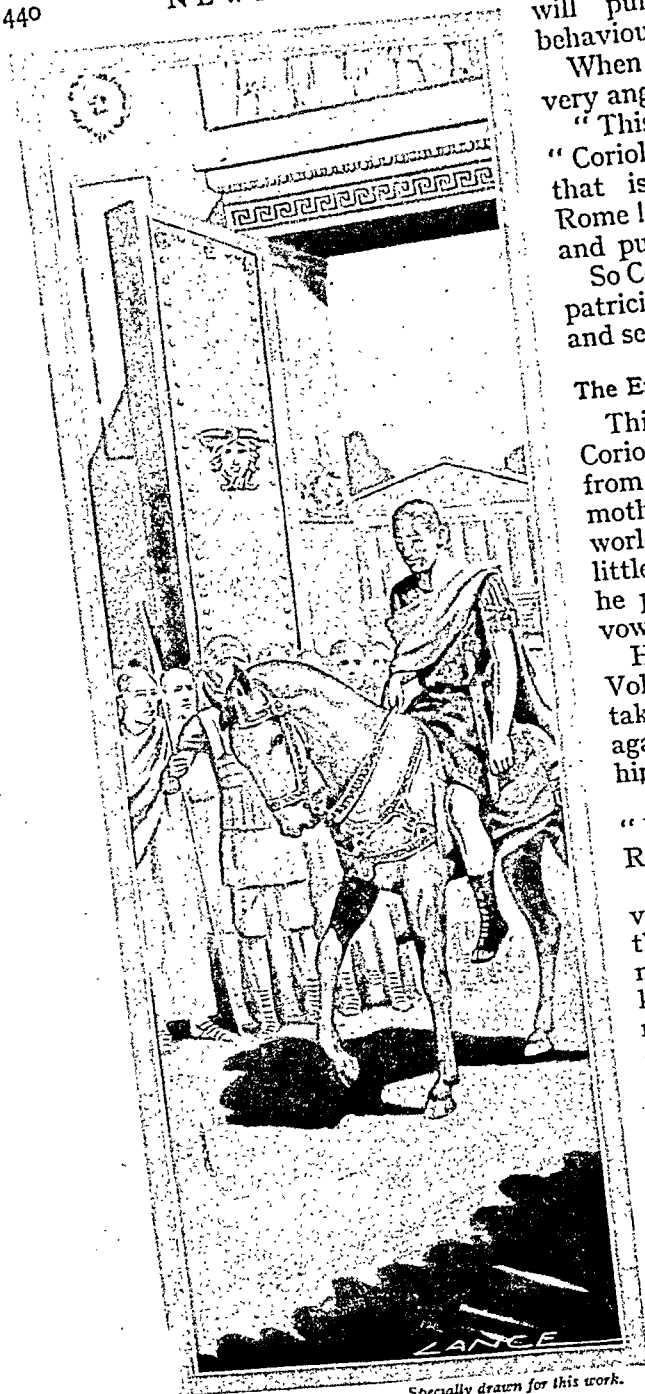
The Volscians agreed at once, and very soon an army was ready. When the Romans heard what Coriolanus meant to do they were afraid, for they knew his power. They saw the army marching towards Rome and hastily called a council to decide what was to be done.

Romans Beg for Mercy.

"Let those who were once the friends of Coriolanus go and beg him for mercy," said the council. So a company of Roman nobles went out to meet Coriolanus.

But the Roman laughed at them.

"Expect no mercy from me!" he said. "Did you come to my aid when I was exiled? Go back to Rome and tell your leaders that they must render back to the Volscians all the land and treasure they took before, and must



It was a terrible punishment to Coriolanus. With bitterness in his heart he passed out of the gates of Rome, vowing vengeance on the people.

Specially drawn for this work.

surrender the city of Rome within thirty days."

The Romans were filled with dismay when they heard this. They sent the priests out to beseech Coriolanus to be merciful, but again he sent back the same answer.

Veturia's Plea.

Then Coriolanus saw Veturia his mother, his lovely young wife Volumina, and his two terrified children coming to speak with him. Both Romans and Volscians held their peace when they saw them. Coriolanus beheld them with tears in his eyes, for it was long since he had seen them, and he loved them dearly. He took them into his arms and kissed them.

Then Veturia his mother spoke to him sadly.

"Oh, Coriolanus!" she said. "Are you indeed my son or are you my enemy? I grieved when you became an exile, but that grief is nothing to the sorrow I feel now to see you Rome's foe. Do you care nothing for your young wife? Do you wish to see your two sons slain by the Volscians?"

Coriolanus made no answer and turned away from his wife and his mother.

A Command to Retreat.

"Why do you not speak to me?" cried Veturia. "Listen to my words, Coriolanus: If you march on Rome, you must pass over my dead body, for it will kill me to see you do battle with your own people!"

Then the Roman spoke, and sad and heavy were his words.

"I will not march on Rome, mother," he said. "But though you have saved Rome, you have slain your son!"

He strode away and commanded the army to retreat. The Romans rejoiced, but Veturia wept to see her son so full of grief.

His words were true. He was slain by the Volscians—but Rome, the city he had once loved so much, was saved.



Specially drawn for this work.

Coriolanus kissed Veturia his mother. "Oh, Coriolanus!" she said sadly. "Are you indeed my son or are you my enemy? Do you care nothing for your young wife?"

THE GEESE THAT SAVED A CITY



Specially drawn for this work.
The fugitives who reached the gates of Rome in advance of the pursuing Gauls fled into the city, forgetting even to shut the gates against the enemy.

A FIERCE enemy was marching on Rome and frightened messengers came running in to tell what they had seen.

"They are giant-like men!" they panted. "They call themselves Gauls. Their weapons are strange and curious, and as they march they shout with loud voices."

The enemy were almost at the gates of Rome. Hurriedly the Romans sent out their army and spread it in a long line to face the oncoming Gauls.

Then the Gauls attacked. They swept down on the Romans, shouting loudly, holding their standards high in the air. The Romans took one look at the fierce foe; and then, flinging down their arms, they fled away as swiftly as they could. Forgotten was their honour—they thought of nothing but escape.

A Strange Battle.

The Gauls pursued them and slew many. Others were drowned as they tried to swim across the Tiber. Those that reached the gates of Rome fled into the city, forgetting even to shut the gates against the enemy.

The Gauls were amazed. Surely this was some trick? At least that is what they thought. Was this the way the powerful, much-feared Romans behaved in battle? It could not be—there must

be some plan behind it—perhaps an ambush somewhere.

But there was no plan, no ambush. It was simply cowardice. Nevertheless the Gauls resolved not to march on Rome that day for fear of a snare.

The Brave Old Men of Rome.

The Romans were in fear and despair. They felt certain that their end was near, and every moment they dreaded to see the Gauls marching into the city.

"We will garrison the Capitol with our young men," they said at last. "All the rest of the people must go to the surrounding district and stay there until they see what happens to Rome itself."

The Capitol was a strong fortress, built on a steep hill. The young Romans climbed up to it, taking as much food as they could with them. The rest of the people fled out of the city to the countryside.

The only ones left in the city were the old noblemen, too feeble to fight and too proud to flee away. They could not go to the Capitol, for that was already full of young men. So they decided to stay in the city itself and wait for death. They would not desert the Rome they had loved and ruled so long.

They took their ivory chairs and set them in the porches of their houses.

They dressed themselves in their richest clothes, and seated themselves on the chairs. Very grand and haughty they looked as they sat there, silent and stern, their long beards sweeping over their chests. So they waited for the foe.

Two days later the Gauls came to the silent and deserted city. They cried out in amaze when they found the gates open. They entered, shouting loudly—but when they saw the lonely houses and empty streets, they fell silent and marvelled to themselves. Then they saw the noblemen sitting on their ivory chairs, quite still, like statues.

The Coming of the Gauls.

"They must be gods," said the Gauls in wonder.

One went up to an old man and stroked his beard to see if it was real. Then the nobleman leapt up and struck the Gaul in anger. In a few moments all the old men were dead, slain by the furious Gauls.

Then the enemy looted the houses

and set them on fire. Next they tried to take the Capitol, and marched up the steep hill with their shields over their heads to protect them. But so fiercely did the garrison defend themselves that soon the Gauls were running down the hill, defeated.

Hunger in the Capitol.

The men in the Capitol looked down on Rome with sadness. They saw their homes burning and heard the cries of the Gauls as they looted the houses. Day after day went by, and food grew scarce in the fortress. Everyone was on short rations and hunger crept in among them.

The only creatures that were well fed were the geese that lived in the Capitol. They were sacred birds, belonging to the goddess Juno, and the soldiers would not let them starve. They fed them with their own food every day, though this meant that they themselves must go without.

One night there came a messenger to



Specially drawn for this work

So many were the enemy that there were scarcely enough Romans to face them. The Gauls swept down on the defenders, shouting loudly and holding their standards high in the air.

the Capitol. He was a Roman, and he had swum the River Tiber in the darkness and then climbed up to the Capitol by a secret path. He came and went unseen by the Gauls, but he left tell-tale marks down the cliff showing the way he had come—though he did not know this, for he was no traitor.

The Gauls saw the marks next day and resolved to take the same path as the messenger, and surprise the Romans in the middle of the night. Then they could easily take the Capitol, and the whole of Rome would be theirs.

The Saving of the Capitol.

So when night came the Gauls followed the secret path, and climbed silently upwards. Not a sound did they make. Not a sword scraped the ground, not a man stumbled. Nearer and nearer to the Capitol they came, their hearts leaping for joy to think that soon the powerful fortress would be theirs.

The Romans were asleep. The dogs heard nothing. Who could save Rome now?

Suddenly the geese stirred uneasily, and took their heads from beneath their wings. They sensed something frightening and were restless. Then they began to cackle loudly and flapped their great wings up and down.

Down the Cliff Face.

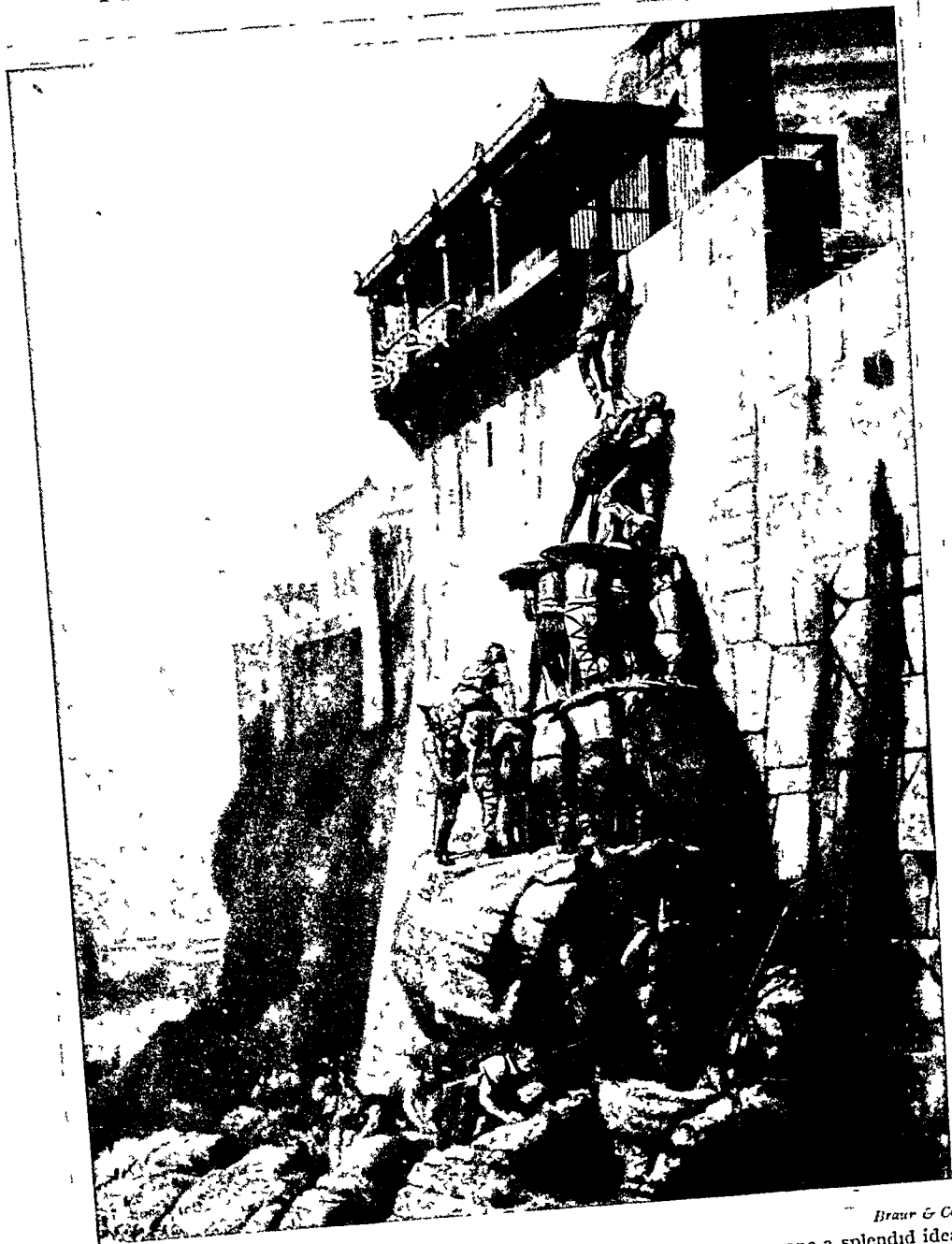
A Roman soldier awoke and leapt to his feet. He caught up his weapons and ran to the wall. Then loudly he shouted to his comrades, for the first Gaul was even at that moment leaping into the Capitol! The Roman smote at him with his shield and the man rolled down the hillside.

Then all the other Romans came running up and fiercely they struck at the swarming Gauls. Man after man was sent toppling down the cliff, and soon the Romans had driven the enemy far down the hill. Peace once again reigned in the Capitol, and the geese



Specially drawn for this work.
The invading Gauls saw the Roman noblemen sitting on their ivory chairs quite still like statues. "They must be gods," said the Gauls, in wonder. One went up to an old man and stroked his beard to see if it was real.

HOW THE GEESE SAVED ROME



Brauer & Co

This powerful picture, reproduced from the original by H. P. Motte, gives one a splendid idea of that romantic episode in history when geese saved Rome. It happened at the time when the Gauls beset the city. The younger Romans had shut themselves up in the great fortress known as the Capitol. Here, for safety, they had taken their geese, which were sacred birds, belonging to the goddess Juno. In the night the Gauls scaled the wall of the Capitol, stealthily striving to surprise the defenders. The Romans were asleep and the dogs heard nothing. The geese, however, shrilled out an alarm to rouse the soldiers and the Capitol was saved.

ceased their frightened cackling and slept peacefully.

So was the Capitol saved and Rome was not lost. After a time the Gauls withdrew, and the Romans came back to their beloved city. She raised her head again and lived to become the centre of the ancient world.

Conquering the Gauls.

Not only that, but the day dawned when the Romans under Julius Cæsar completely conquered the Gauls, whilst two great Roman Emperors so ruled and directed the conquered country that they brought the inhabitants from being partly barbarians to a state of considerable civilisation.

Perhaps you are wondering exactly from what part of Europe came the Gauls who set out to attack Rome? We are all very apt to think of Gallia, or the land of the Gauls, as being the country which we know to-day as our good neighbour France. As a matter of fact, we are right up to a point, but the home of these fierce men also included some portions of both Holland and Germany, the whole of Belgium and a good deal of Switzerland.

So you see that the Land of the Gauls represented a very large portion of Western Europe, though most of it was densely wooded and a very wild country indeed.



THE CATAPULT

Autotype Co

The above illustration, after the famous picture by Sir Edward Poynter, R.A. (1836-1919), shows that ingenious weapon of warfare the Roman catapult, being used to batter down the walls of Carthage. This appliance threw enormous darts, stones or arrows, the missiles being sent hurtling through the air when a heavy bow was released.

HOW HANNIBAL CROSSED THE ALPS



HANNIBAL SWEARING ENMITY TO THE ROMANS

Rischgitz.

Hamilcar, one of the greatest generals of Carthage, went to war against Rome. On the eve of his departure his son, Hannibal, then only nine years of age, besought to be taken with him. Hamilcar agreed, but ordered that the boy should first take a solemn promise to spend his whole life, if need be, in fighting the Romans. The incident is illustrated above, and you see Hannibal making his vow in the temple. Our picture is after a painting by Benjamin West (1738-1820), the Anglo-American artist who realistically depicted so many of the romantic episodes of history.

MANY centuries ago there was a famous city called Carthage. It stood on the northern coast of Africa, and was very rich and very powerful. Its ships swept up and down the blue sea and traded everywhere. It ruled nearly all the lands round about, and even Spain and part of France were forced to pay tribute to the wealthy town.

Then one day Carthage heard that another city was becoming famous. This was Rome, on the banks of the Tiber. Roman ships came trading up and down the coast, and tales reached Carthage that the Romans were seeking for power, and might prove dangerous rivals.

"Rome must be destroyed before she harms us," said the Carthaginians. So they declared war, and began to prepare an army to send against her.

Hamilcar and his Son Hannibal.

One of the greatest generals of Carthage was a man called Hamilcar. He was sent to Spain to conquer it, and since Spain was over the sea he had to

say good-bye to his wife and son, and embark in a ship.

His son was called Hannibal, a sturdy boy of nine years old. He came down to the seashore to watch his father make preparations to go away. Hamilcar was making the usual sacrifices, and Hannibal watched him, looking around in excitement to see so many ships, so many strange soldiers, and to hear such a shouting and clamouring.

In Strange Countries.

Hannibal longed to be a soldier and to go over the sea to fight in strange countries. He wanted to sail away in a ship. He hated to stay behind whilst his brave father left him.

Hamilcar suddenly glanced at his little son. He was struck by the look of longing in the boy's face. He loved him very much, and could not bear to part from him. A sudden idea came into his mind.

"Hannibal," he said, "shall I take you with me?"

Hannibal looked at his father in amazement and his heart beat quickly.

"Yes, take me, father," said the boy beseechingly.

"Very well, you shall come," said Hamilcar. "But you must first make me a solemn vow that you will never break."

"I will make it," said the little boy.

"Promise me to hate the Romans all your life long, and to spend your whole life fighting them," said Hamilcar.

"I promise," said Hannibal, and he kept his vow faithfully.

Hannibal Becomes a Soldier.

Hamilcar sailed away with Hannibal in his care. No longer was the boy treated as a child. He had to act like a man and have the courage and hardness of a soldier. He lived in camp with all the other men, and so strong was the boy and so fearless, that never once did Hamilcar regret bringing him.

Before he was very much older the boy Hannibal had become as good a

soldier as any other. He was brave and strong, and a born leader of men. He was with Hamilcar when Spain was conquered, and learnt all that his father could teach him. When Hamilcar died, Hannibal took his father's place. He was ready to fulfil his vow!

At War with Rome.

Soon war broke out with Rome, and Hannibal rejoiced, for he knew his chance had come. He was in Spain with the Carthaginian army, and the Romans thought that they would fight him there and defeat him. But Hannibal decided differently.

He wanted to fight the Romans in their own country. That meant that he must leave Spain, march through the Pyrenees, cross the River Rhone, and then go right over the mountainous Alps into Northern Italy. Hannibal did not know the Alps at all, but that



Nothing could daunt Hannibal—not even the Alps and the fact that it was getting late in the year and the winds cold and bitter. On he marched, and his men with him, climbing the steep mountain passes.

Specially drawn for this work.

mattered nothing. He meant to march into Italy and take Rome itself!

Soon his army was on the march. Hannibal had 20,000 horsemen and 90,000 foot soldiers, besides thirty-seven elephants. It was a tremendous number to take over an unknown way.

Across the Alps.

All the way to the Pyrenees the army was set upon by fierce native tribes, and soon Hannibal had lost a quarter of his men. When the soldiers gazed upon the snowy tops of the mountains they were full of dismay. Many of them threw down their arms and said they would go no further.

Hannibal knew that it was no use taking with him unwilling soldiers, for such men fight badly.

"Those who wish to go may leave straightaway," he said. At once 11,000 men turned and left him. Hannibal marched on with those that remained.

Through the Pyrenees he went, and over the River Rhone. Then he came to the mighty Alps, and the soldiers gazed on them with awe. It was getting late in the year, and the winds were cold and bitter. But nothing could daunt Hannibal. On he marched, and his men with him.

Then began a dreadful time for the army. They had to climb up the steep mountain passes with their heavy baggage. They had to drag up their horses and mules and drive on their elephants. Frost came down and snow hid the path. The way grew slippery, and men and beasts often slipped and fell.

The Summit Gained.

Food was scarce, and men became ill and died. Others perished with the bitter cold that grew greater as the army climbed higher. The numbers became smaller day by day, but Hannibal would not give in. On he went, up and up, bearing cold, hunger and weariness.

It seemed to the tired soldiers that



Specially drawn for this work.

Hannibal shouted in joy and stood on the summit of the pass, pointing before him. Below them lay the lovely land of Italy. "We will descend the mountains into the plain," he said, "and give battle to the Romans."

the Alps had no top. They must go up to the sky and beyond! Day after day the men still had to climb, and day after day the same bitter wind met them, and the frost caught their numb fingers.

But at last Hannibal shouted in joy and stood on the summit of the pass, pointing before him. His men, almost too tired to rejoice with him, came staggering up and saw what caused Hannibal to cry out. Below them lay the lovely land of Italy, and somewhere down there was the proud city of Rome, which Hannibal longed to take.

"We will descend the mountains into the plain," said Hannibal. "Then we will rest for the winter months, but when spring comes back again we will give battle to the Romans. Then shall they know the might of Carthage!"

HANNIBAL IN ITALY



Specially drawn for this work

The road by the lake was very narrow and lay in a valley with hills sloping upwards from the path. There was one entrance and one exit to the road and Hannibal laid his plans carefully. The unwary Roman army entered the road.

THE Romans gathered together a fine army of 40,000 good soldiers to fight Hannibal. In charge of the men was a Consul called Flaminius, who was eager to meet the Carthaginians in battle. He led his men by a short cut along the side of Lake Trasimene, hoping to surprise Hannibal by arriving before he was expected.

A Road by the Lake.

But Hannibal was well posted regarding the movements of the Roman army, and he knew quite well that Flaminius was intending to take the road by the lake. The Carthaginian rejoiced, for he saw a fine opportunity for an ambush.

The road by the lake was very narrow and lay in a valley with hills sloping upwards from the path. There was one entrance and one exit to the road, and Hannibal laid his plans carefully.

"Post men in the hills that slope down to the road by the lake," he commanded. "Place a large force at the exit so that none may go out that way, and hide another force at the entrance, bidding them close round it as soon as the Romans have passed through. Thus we shall have the whole army in a trap."

The unwary Roman army entered the road by the lake, and as soon as the last man had passed, the Carthaginians closed round the entrance. There were others at the end of the valley, so that no Romans could pass out, and hundreds more in the hills around, waiting the signal to charge down to the path.

Halfway along the lake road Flaminius gave the order to encamp for the night. The Carthaginians rejoiced, for that meant they could attack the Romans in the darkness. Hannibal waited until night had fallen and then gave the order to attack.

The Battle of Lake Trasimene.

Down the road and down the hillside poured the hosts of Carthaginians. The terrified Romans leapt up in panic, wondering what was happening. Flaminius tried to rally his army, but it was impossible. The Romans were everywhere in flight, and no matter where they fled they met fierce Carthaginians who slew them. Of all that brave 40,000, only a quarter found their way back to Rome with the news.

Flaminius fell in the battle. He deserved his death, for by his carelessness he lost the lives of thousands of Romans. He had not even troubled to

THE BATTLE OF LAKE TRASIMENE



Specially drawn for this work.

At the Battle of Lake Trasimene the Romans were everywhere in flight, and no matter where they fled they met fierce Carthaginians, who slew them. Flaminius fell in the battle; and, of all his 40,000 brave men, only a quarter found their way back to Rome with the news.

send scouts ahead to see whether the enemy were near.

Fabius the Lingerer.

The Romans assembled another army, but it was not so good as the first one, for they had lost all their finest men. In charge of it was a man called Fabius, who, because he knew his troops were ill-trained, dared not give battle to Hannibal. Instead he followed closely on the Carthaginian's heels, near enough to harass him continually, but not close enough for battle. Because of this plan he was called Fabius the Lingerer.

Hannibal grew tired of being followed by Fabius, and determined to make him fight.

"I will march down into the lovely countryside of Campania," he thought. "When Fabius sees my soldiers spoiling and burning it, he will be angry and give battle. Then I will defeat him utterly."

Hannibal in a Trap.

Hannibal took guides to lead him to Campania, but the men lost their way and led him into a valley from which there was no outlet except by passes in the hills.

Fabius, who was following the Carthaginians closely, as was his custom, suddenly realised that he could catch Hannibal in a trap. He had only to place men at every pass and the enemy would be caught, just as Flaminius had been caught by the side of Lake Trasimene!

At once Fabius posted legions at every pass, so that there was no way in and no way out of the valley that was not guarded by Romans. His men rejoiced, for they felt certain that the bold Hannibal was trapped at last.

The Carthaginians were panic-stricken when they found themselves trapped, but Hannibal rode up and down the line telling them not to be afraid, for he would save them without any loss of life. They trusted him, but



Specially drawn for this work.

Hannibal's guides lost their way and led him into a valley from which there was no outlet except by passes in the hills. At once Roman legions were posted in every pass.

wondered how he could evade the Romans, who were at every entrance and outlet of the valley.

Then Hannibal thought of a cunning trick. When night came he bade his men take 2,000 oxen and tie on to each horn a large lighted torch. Then he commanded them to drive the beasts up the hillside all together and leave them to race off in the darkness.

Hannibal's Trick.

The Carthaginians obeyed. The oxen, with lighted torches on each horn, were driven up the slopes and ran off in a fright. The Romans suddenly caught sight of all the lights up the hillside, and in a trice the word went round: "The Carthaginians are escaping over the hills!"

The Romans, never guessing that the torches were carried by oxen, and not by men, left the passes they were guarding and ran to stop what they thought were the enemy. As soon as the road was unguarded Hannibal marched his men quietly out of the valley into a safe place! Meanwhile the Romans were lost in amazement, meeting nothing but bellowing oxen on the hillside!

The Battle of Cannæ.

The campaign continued, and Hannibal won victory after victory. Then came the terrible Battle of Cannæ, after which the Carthaginian became master of nearly all Italy.

Varro was the leader of the Romans at that time, and he determined to give battle to the enemy and defeat them once and for all. He hung his red cloak outside his tent as a sign for battle, and Hannibal saw it from afar.

Swiftly he made his plans. He placed his men in the shape of a half-moon, with the bulge towards the enemy. At the two ends were horse soldiers and in the bulge were foot soldiers. When the Romans attacked the centre gave way; and, at the same time, the horse soldiers at the ends rode round the Romans and



Specially drawn for this work.

Hannibal had a large lighted torch tied to each horn of the oxen. Then he commanded his men to drive the beasts up the hillside all together and leave them to race off in the darkness.

met at the rear. The foot soldiers were commanded to rally again, and then, to the terror of Varro, he saw that the whole of his army was surrounded by the Carthaginians!

Closer and closer pressed the enemy, cutting down the helpless Romans. The army was utterly destroyed, and only a few lived to tell the dreadful tale to Rome. Hannibal had conquered and Rome was in despair.

Yet, despite his success, Hannibal

was not able to lay siege to or capture Rome herself. To the end of his days, however, he was always faithful to the promise he had made to his father, and besought all who possessed the power to make war against Rome.

When you think of men who rank as the greatest commanders in the history of the world you must never forget Hannibal. He ranks with the very highest.



When the Romans attacked the centre gave way; and, at the same time, the horse soldiers rode round the Romans and met at the rear. Closer and closer pressed the Carthaginians, cutting down the helpless Romans.

Specially drawn for this work.

HOW A NOBLE CITY WAS DESTROYED



Specially drawn for this work.

In the Roman Senate was a man called Cato, who used to end all his speeches with the same words: "Carthage must be destroyed!" He was afraid that the city might grow great again and rival Rome's power.

HANNIBAL stayed in Italy some time longer, but his army was gradually dwindling. He could not get any more men from Carthage, and soon the towns he had won commenced to go over to Rome again.

Then the great general was driven into a corner of Italy, and began to fight a losing battle. He fought bravely until Carthage sent him a message to return at once, for she needed him.

Scipio Africanus, the Roman.

The Romans had at last found a general great enough to strike terror into the heart of Carthage. This was a man called Scipio Africanus, who had defeated the Carthaginians in Spain, and was now in Carthage ready to fight there also.

Hannibal returned and was given an army to march against Scipio. But the men were ill-trained, and could do nothing against the fine troops that the Roman general had with him. A battle was fought at Zama, and Hannibal was completely defeated.

Then Carthage had to make peace on Rome's terms, and very hard terms they were. She had to pay a great sum of money, surrender her fleet, and give her promise that she would never go to

war with any country unless Rome first gave her permission.

Carthage Must be Destroyed.

Now there was in the Roman Senate a man called Cato, who used to end all his speeches with the same words: "Carthage must be destroyed!" He was afraid that the city might grow great again and rival Rome's power. He urged the Romans to do all they could to oppress Carthage and to destroy her as soon as they had a chance.

Carthage tried to comply with all Rome's demands, but at last there came one that seemed impossible.

Rome's Harsh Command.

"Rome commands that Carthage shall be removed from the sea, and taken ten miles inland," said the Romans, and sent an army to enforce their command.

The Carthaginians were in despair. How could they remove their city? Their whole livelihood depended on their sea trade, and that would all go if they moved inland. They could not leave their fine city, with its great temples, to fall into ruin. But what else could they do?

Rome had their weapons and their the

harbour. Twelve miles away was a strong Roman army waiting to march on Carthage and destroy it.

The Carthaginians could do nothing but defy Rome. They determined to make new weapons and to fortify their city so strongly that the Romans would be foiled. They began to make preparations.

Courage in Carthage.

How Carthage worked! Women cut off their hair to make bow-strings, and sold their jewels to pay the army. Lead and iron were torn out of roofs and walls and made into swords, spears, catapults, shields and bolts. It was not long before nearly every man in the city had a weapon of some sort. Carthage was ready for the battle!

At last the Romans marched on Carthage to take it. They expected to find a defenceless city, whose men had no weapons, and they hoped to loot, destroy and kill as much as they pleased. To their amazement they found a strongly-fortified town, whose citizens

were all armed, and with a strong army both inside and outside the walls.

The Siege of Carthage.

For two years the Romans tried to take Carthage and failed. Then came a fine general, the Younger Scipio, who drove the Carthaginian army into the city, captured all the villages around and began a strict siege.

He built a stone embankment across the harbour so that no food could reach Carthage by sea, and then he waited for surrender.

Food became very scarce in the city and the people grew weak and listless, but did not lose their courage. Then Scipio defeated the soldiers guarding the walls and entered Carthage. He captured the great market place and turned his eyes to the citadel into which the people had gone for safety.

Taking the Citadel.

But it was not easy to take the citadel. The way was lined by tall six-storied houses, and each of these



Specially drawn for this work.
The many followers of the Roman general defeated the soldiers guarding the walls and entered Carthage. Scipio then captured the great market-place and turned his eyes to the citadel, into which the people had gone for safety.



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THE BUILDING OF THE ROMAN WALL

This is a reproduction of Bell Scott's picture of the building of Hadrian's Wall, and gives one a splendid idea of how the British were treated by their imperious Roman taskmasters. This wonderful wall, much of which remains to this day, was planned by the Emperor Hadrian. It was upwards of seventy miles in length, and extended from Solway Firth to Wallsend-on-Tyne. Its purpose was to keep the bloodthirsty northern races within their own territory, and it was from 6 feet to 9 feet in thickness.

was crammed with soldiers eager to defend the fortress. The Romans entered the houses and fought the Carthaginians hand to hand. They forced them back, they chased them to the roofs, they flung them down into the streets below.

Once a house was cleared it was set on fire. When the people in the citadel saw the flames they surrendered. All hope was gone from them. They were starving, and their city was burning.

The Burning of Carthage.

Every building was set on fire. The lovely temples, the noble public buildings, the fine houses, the gay shops—all went up in flames and crashed to earth by the score. Scipio, the Roman general, wept as he saw them, for he knew that Rome was doing an unjust and cruel deed—the worst deed she had ever done, for she was usually generous to her vanquished foes.

“Not one stone must be left upon another,” commanded Rome, and Scipio obeyed the command. What fire left undone, the soldiers did. Every piece of wall that remained standing, every pile of stones was levelled to the ground.

Soon the great city of Carthage was nothing but a desolate, ruined expanse, smoking and smouldering everywhere. The bright sky was darkened by the clouds of smoke. Only the sea gleamed pure and blue, but no Carthaginian ships rode at anchor there. No one could guess that a noble city had once stood on that desolate spot.



R. H. BRONK

The Roman soldiers entered the houses and chased the Carthaginians to the roofs. They then fought hand to hand and the vanquished were flung down into the streets below.

Specially drawn for this work.

One thing more remained to be done. Scipio had been commanded to plough up the ground on which Carthage had stood. This was done, and then indeed Carthage was no more!

Looking Backwards.

Before he departed to Rome Scipio stood on the blackened ground and pronounced a fearful curse on any one who should try to build a city again in that place. Then he and his men took ship for Rome, who was rejoicing that she now had no powerful enemy. As they sailed away only a few streamers

of smoke showed where the beautiful city of Carthage had once stood.

Of the people who remained alive after the terrible punishment of their race most were taken by their captors and sold as slaves.

Rising from its Ashes.

Perhaps you wonder now what happened afterwards to Carthage, when the passing of time had somewhat healed the wounds. To begin with, the country of which Carthage was the centre became a Roman colony.

Years later the Romans themselves

built another Carthage, where they established many schools of learning. It became a kind of Roman Empire in Africa, and it is of great interest to us in these times to know that the place formed one of the homes of Christianity.

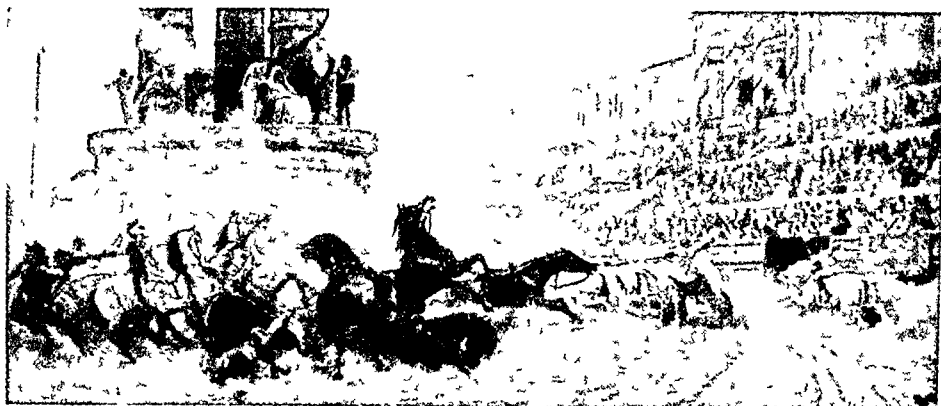
Now you may be wondering exactly what was the size of the ancient city which the Romans so ruthlessly destroyed so that "not one stone was left upon another." It is believed to have contained some 700,000 inhabitants, whilst our present-day Manchester holds 764,000, so you can see how large and important it was.



"Not one stone must be left upon another," commanded Rome, and Scipio the general obeyed the command. Every piece of wall that remained standing, every pile of stones, was levelled to the ground.

See how drawn for this work

THE MOST FAMOUS ROMAN



CHARIOT RACING IN THE CIRCUS MAXIMUS.

Rischgitz

In the fourth century the Circus Maximus, at Rome, was the largest in the world. It was built originally by Julius Cæsar and frequently enlarged. The circus was used for races both with horses and with chariots; various athletic games; combats with wild beasts and so on. In those days chariot racing occupied the place of football in our times, the followers wearing separate colours. In the picture above, by Professor Ademollo, we see a race in progress and very exciting it must have been. The Romans spoke of a two-horsed chariot as a "biga"; one with three horses as a "triga", whilst a four-horsed vehicle was a "quadriga."

ABOUT one hundred years before the birth of Jesus Christ, one of the greatest of all the Romans was born. His name was Julius Cæsar.

In his boyhood he read stories of brave and mighty men, and longed to be like Alexander, and conquer many lands. He grew up into a tall, slight youth, with bright dark eyes, wise and brave beyond his years.

A Great Soldier.

The people of Rome loved him, for he spent money on them, and promised them many things. They made him ruler of Spain, and there he won many battles and became rich and powerful.

When he returned to Rome he found that two men, Pompey and Crassus, were rulers of the city. Cæsar joined them, and the three friends ruled together.

But Cæsar wanted to have Rome in his own hands and to rule her himself. To do this he needed an army. So he had himself made Governor of Gaul, away beyond the Alps, and there for nine years he trained his men to be one

of the greatest fighting forces that had ever been seen in the world.

These men fought the wild, fierce Gauls continually. The land was covered with forests, and there were many deep and wide rivers to cross, many mountains to climb and marshes to wade through. Julius Cæsar never once faltered in his task. He conquered every one of the 300 tribes of Gaul and made himself their master.

He made fine, straight roads, and built great cities. His soldiers adored him and would follow him anywhere and do anything for him. He was one of the greatest generals the world has ever known.

Crossing the Rubicon.

Cæsar made himself master, not only of France (or Gaul, as it was then called) but also pushed across the Rhine into Germany and through the mountains into Switzerland. He even crossed over to England, and fought the Britons there, as you will hear in the next story.

Cæsar wanted to be master of Rome. He had his army, and the people loved

him and desired to welcome him. When Pompey heard the Romans praising Cæsar, he was dismayed, for he was afraid that if the great general returned to Rome his power would be gone, for Cæsar would rule in his stead.

"Foremost Man in the World."

So he sent a message to Cæsar, bidding him to send away his army and return to Rome himself. Cæsar knew what this meant—the loss of his power and perhaps death. But on the other hand, if he refused, civil war would spring up, and Romans would fight against Romans, for Pompey would certainly march his army against that of Julius Cæsar.

Cæsar's men were encamped on one side of a river called the Rubicon, which divided Rome from Gaul. Once the Rubicon was crossed, war would be declared. Should he cross it or not?

Cæsar thought long and deeply. Then he turned and gave an order. The Rubicon was to be crossed!

When Pompey heard that Cæsar was coming he took his army and fled away

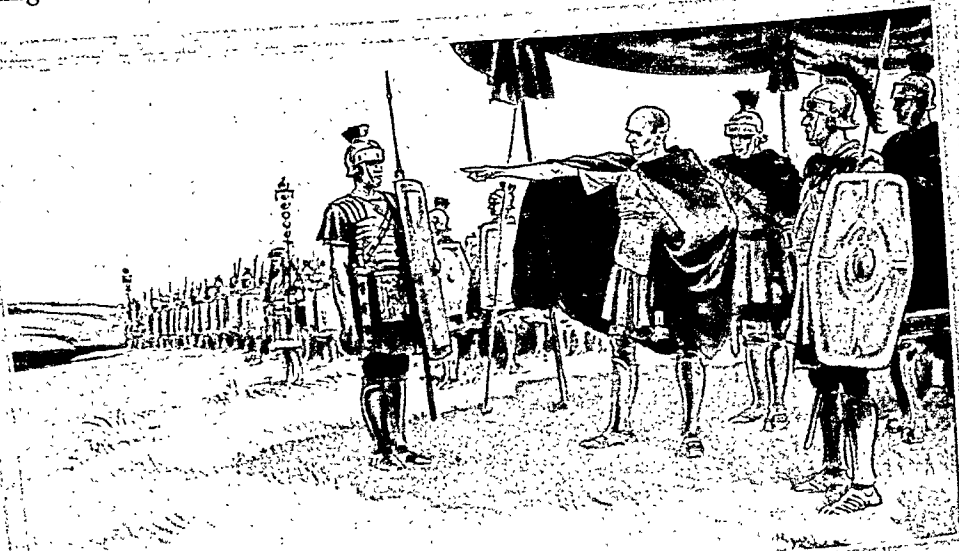
to Greece. The general did not find it difficult to make himself master of Italy, and within sixty days he was proclaimed ruler. The people of Rome gladly welcomed him and cheered in triumph when he entered the city.

Soon Cæsar crossed to Greece and fought Pompey. He overthrew him in a great battle, and Pompey fled to Egypt. He was killed there and his head was sent to Cæsar. But the Roman wept when he saw it, for he remembered the happy days when he and Pompey had been friends.

For two years Cæsar waged war against foes in Spain and Africa, and success came to him in everything. At the end of the two years he was "the foremost man in the world," and his name was known from end to end of the land.

A Wise Ruler.

He was a wise and good ruler of the Roman people. He kept peace and made good laws. He worked only for the welfare of the state.



Specially drawn for this work.

Cæsar's men were encamped on one side of a river called the Rubicon, which divided Rome from Gaul. Once the Rubicon was crossed, war would be declared. Should he cross it or not? Cæsar thought deeply. Then he gave an order. The Rubicon was to be crossed!

THE IDES OF MARCH



W. F. Mansell.

This famous picture by Sir Edward Poynter, R.A., who was noted for his classical paintings and decorations on the walls of great buildings, shows a scene in Ancient Rome. Julius Caesar is seen at the entrance to the Royal Palace, in company with his wife, Calpurnia. She is anxiously drawing his attention to the glowing beam of light from a mysterious comet that has recently appeared in the skies and reminding him apprehensively that the soothsayers have cautioned him to beware of great danger when the ides of March came round. The ides was merely a division of time in the Roman calendar and marked the thirteenth day of the month, except in March, May, July and October, when it fell on the fifteenth. Caesar was therefore bidden to beware of the fifteenth of March; and, as history records, it was upon that very day that he was assassinated.

By permission of the Corporation of Manchester.

One day when he was in the streets some one hailed him as king. The listening crowd looked angry when they heard this, for Rome had no wish for kings. She had not forgotten her last king, Tarquin the Proud, and she was determined to have no more. Cæsar saw the angry looks, and he called out, "I am not king, but Cæsar."

Cæsar's Death.

This pleased the people, and they cheered him. But really Cæsar would have liked to be king, and often wondered if a time would come when he might be crowned with the full consent of Rome.

Not long after this a friend of his, Mark Antony, stepped forward and placed a crown on Cæsar's head. But he took it off, and once again the people shouted joyfully. They loved Cæsar, but they hated the thought of a king.

Soon many of the nobles of Rome, who were jealous of Cæsar and fearful

of his power, began to plot against him. Cassius, a cunning soldier, whispered to them that Cæsar had planned to make himself king, and so they decided that he must die.

Even Brutus, Cæsar's great friend, joined the plot when he heard that his friend meant to be king—for Brutus loved the State of Rome even more than he loved Cæsar, and he thought it would be wrong for one man to have so much power as Cæsar would have if he were king.

Then one day, when Cæsar was sitting in his seat listening to a man's petition, one of the plotters stabbed him. Cæsar sprang up and tried to defend himself, but there were drawn daggers all around him.

Time after time he was stabbed, and then he saw his great friend Brutus among the murderers.

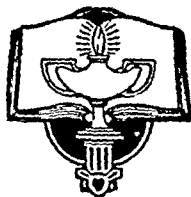
"And thou too, Brutus?" he said sorrowfully. Then, drawing his cloak across his face, he fell to the ground and died, mourned by his people.



THE MURDER OF CÆSAR.

This is a reproduction of a famous painting by Karl von Piloty, which is now in the collection of the Munich Museum. It shows the great German artist's work on the scene of the murder of the great Roman statesman. The painting is a masterpiece of the 19th-century school, and it is one of the most powerful and dramatic works of art of the period. It shows the great German artist's work on the scene of the murder of the great Roman statesman. The painting is a masterpiece of the 19th-century school, and it is one of the most powerful and dramatic works of art of the period.

The Romance of History



Tales of Britain Long Ago



Specially drawn for this work

A little group of men stood upon the white cliffs of Dover, gazing anxiously over the channel that lay between them and the continent of Europe. As they watched there came into sight, far away upon the horizon, the sails of a fleet of ships. And the tall, fair-haired men knew that the Romans were upon them.

THE COMING OF THE EAGLES

LONG ago, on a fine morning in the late summer, a little group of men stood upon the white cliffs of Dover, gazing anxiously over the channel that lay between them and the continent of Europe. As they watched, there came into sight, far away upon the horizon, the sails of a little fleet of ships, and the tall fair-haired men who saw them knew that the well-trained, armour-clad soldiers who bore the proud Roman eagle as their standard were upon them.

Julius Caesar Lands.

Gallantly, but vainly, they withstood the landing of the great Julius Caesar and his army of 8,000 men. Their fierceness prevented the invaders from getting very far, and a storm which damaged the fleet completed the discomfort of the Romans, who returned

to the mainland about three weeks after their first arrival in Britain.

But, wiser for the lesson, Julius Caesar returned in the next year with a bigger army. This time he managed to reach the country just north of the Thames, though the Britons, under the leadership of a brave chief named Cassivellaunus, fought with all their might to hold him back. Their daring, their skill on horseback, their strange war chariots with the deadly scythes on the wheels, and their knowledge of the woods and marshes made them difficult foes to conquer. Although beaten in open battle, Cassivellaunus carried out a strong attack upon the camp which the Romans had built near their landing place; and, because of the hopelessness of such warfare and the fact that bad weather had again damaged his fleet, Caesar returned to



Even when Caradoc stood before the emperor he remained undaunted. "You fight to make everybody your slaves," he said, "but I fight for freedom."

Specially drawn for this work.

the continent once more, leaving the Britons unconquered.

A Brave Welsh Chieftain.

For nearly 100 years the Romans left this island alone, and then an army was sent to conquer it. Many of the tribes submitted, but Caradoc, a chief who ruled over a part of Wales, refused to yield. He gathered an army and made a gallant stand in the rocky fastnesses of his own country. But not even the protection of mountains and valleys and stone walls could stop

the steady advance of the Roman troops. Caradoc's men fled, and he himself was betrayed to the enemy and taken to Rome. There he was made to walk behind the magnificent chariot of the emperor, as he rode in triumph through the streets. The British chief, proud even in defeat, looked at the wonders of the greatest city of those times and marvelled.

"Why," he said, "should men who have so much want to take from a man like me the little that he has?"

Even when he stood before the emperor he remained undaunted.

"You fight to make everybody your slaves," he said, "but I fight for freedom!"

Courage Wins Respect.

The brave Caradoc was never allowed to return to his own land, but his courage won the respect of the Romans, and he was treated with kindness as long as he lived.

The conquest of Britain went steadily on, but for a time revolts were frequent.

One of the most famous was that led by Boadicea, a chieftainess who ruled in the east. Because she refused to pay an unjust tax, a Roman officer caused her and her two daughters to be publicly flogged. She called upon her people to avenge this outrage, and roused them to frenzy by her fierce words and the sight of the scars left by the Roman rods. But, although the Britons fought bravely, they were defeated, and Boadicea took poison rather than become a prisoner.

Strong forts were built in many

places, and good roads made to connect them. Bit by bit the Romans extended their rule to the far north, but the fierce tribes of the highland districts of Scotland were too much even for the armies of "The Mistress of the World," and in the end the conquerors built two great walls to keep off these "barbarians," and rested content with what they had won.

Both Wise and Just.

The Roman occupation of Britain lasted for nearly 400 years, and the Britons gained much from it. They enjoyed peace and prosperity, for the Romans, although stern masters, were wise and just. Towns sprang up, and trade began. Forests were cleared away, and marshes drained. The knowledge and the civilisation that Rome enjoyed were gradually introduced. The influence of these first invaders of our land was so great and lasting that the effect of much that they did remains around us even to-day.

The Makers of Roads.

Can you think of any way in which Roman influence still remains? The plainest evidence is on the face of the country in the shape of our road system. From the time of the Roman occupation until the coming of motor transport no really vital new arterial roads were made. Even in the coaching times the main highways were to a great degree of Roman origin; and many of the Roman roads, called "streets" from the Latin *strata* (a paved way) are to this very day carrying our cars and lorries. Watling Street was a Roman road, adapted from



Specially drawn for this work.

During the Roman occupation of Britain towns sprang up and trade began. The invaders, although stern masters, were wise and just. The knowledge and the civilisation that Rome enjoyed were gradually introduced.

a British track. It linked London and Canterbury, and stretched to Shropshire. Much of it is still in use.

So the Roman eagles came to Britain and stayed there until, because of troubles in the Imperial City itself, they were recalled. Then they departed, leaving the Britons to rule themselves, and to defend their land against other invaders. But, since the Britons had forgotten how to fight, and did not know how to rule wisely, the departure of the Romans was a heavy misfortune, and brought about much unhappiness.

THE MAKING OF ENGLAND



War and suffering came upon the land. The Picts and Scots harried it without mercy from the north and carried fire and sword even to the gates of London.

ON a certain day, thirty years or so after the Romans had left these shores, two men stood on the deck of a little vessel which lay at anchor off the Isle of Thanet. The name of the one was Hengist, and of the other Horsa. They had come to Britain at the request of Vortigern, King of Kent, and desperate must have been the need which made him seek help from such men. For Hengist and Horsa, and those with them, were fierce sea-rovers—heathens from the coasts of Germany and Denmark.

But the need of Vortigern and of all the people in Britain was very desperate indeed; for, with the departure of the Roman legions, peace and prosperity departed also, and war and suffering had come upon the land. The Picts and Scots harried it without mercy from the north, and carried fire and sword even to the gates of London, while sea pirates constantly swooped down upon the east, and burnt and slew everything and everybody within reach.

Early Settlers in Kent.

Hengist and Horsa found this land, which they had come to save, very much to their liking. Their own country was far less fertile and pleasing, and life in it was hard. In return for the

help which he had received, Vortigern gave to them a portion of Kent, and here they settled and made homes for themselves.

But before very long they turned their weapons against their British hosts, and invited others of their race to come and share this goodly land. And the others came, bringing their wives and children and possessions. They swarmed down upon England all along the east and the south. They were fierce warriors, trained in the school of hard experience. They had been made strong and daring by constant struggle against hunger, savage beasts, pitiless human enemies, and all the dangers that could beset men on land and sea.

The Britons resisted bravely, but they were thrust backward until their only refuge lay in the mountainous regions of the west, and meanwhile they suffered terrible things. Their cities were destroyed; the priests were slain, even at the altar; great numbers of people were killed without mercy. "Some of the miserable remainder," says an ancient author, "being taken in the mountains, were butchered in heaps. Others, spent with hunger, came forth and submitted themselves to the enemy for food, but were made slaves for the rest of their lives, even

if they were not killed upon the spot. Some, with sorrowful hearts, fled beyond the seas. Others led a miserable life among the woods, rocks and mountains, with scarcely enough food to support life, and expecting every moment to be their last."

What these new invaders took they held. They settled themselves in villages all over the land, bringing with them their own government, speech and customs. A hundred and fifty years after the coming of Hengist and Horsa their kinsmen occupied the country from the North Sea to the Severn, and from the southern shores to the Firth of Forth.

The First King of the English.

The struggle between the English and the Britons was followed by a struggle between the English themselves. There were many tribes, each with its own chief, and each striving for power. But, out of this confusion, there gradually grew up a number of small kingdoms; and these, in the course of time, decreased to a few larger ones. Even then the struggle went on, and it was not until 350 years after the first landing of the sea rovers that any man could justly call himself by the title which Egbert used—King of the English.

Meanwhile another great change had come about, for, even during these centuries of fighting, the heathen English became Christians. Every one knows the story of how a young man named Gregory, seeing some fair-haired children in the slave-market at Rome, and being

told that they were Angles, said: "They are not Angles, but angels!" He made up his mind that the English should not be allowed to remain "in darkness"; and, when he became Pope, he sent Augustine, with forty monks, to teach the gospel of peace.

Augustine landed in Kent, and though Ethelbert, the king of that part of the country, would not at first accept this new religion, he permitted his



From the painting by A. Forestier.

A MARKET SCENE IN ROME.

In the busiest parts of Ancient Rome, and especially in the slave market, one might have seen many fair-haired children, who had been born in captivity or else brought prisoners from Britain. "They are not Angles, but angels," said Gregory, who afterwards became Pope, when he sent monks to England to teach the gospel of peace.

people to be taught, and at last became a Christian himself. Augustine was the first Archbishop of Canterbury, and the little Church of St. Martin, in which he preached and taught, is still to be seen and venerated.

But Christianity gained a hold in the north also; for, at the invitation of a certain king of Northumbria, a monk named Aidan came from Scotland and began to spread the gospel.

The Herdsman Poet.

It was here, in a monastery at Whitby, that Caedmon, a famous seventh-century poet, lived. He was a simple herdsman, and one evening, sad because he could not play the harp and sing (as it was the custom for everybody to do in turn at feasts), he went out to the cattle-shed. There he dreamt a wonderful dream of the creation of the world.

When he awoke he was able to remember it all, and to add to it, and from that day he found himself inspired to serve God as a writer of beautiful sacred poetry.

Another famous writer who lived a century later, was the Venerable Bede, who lived in a monastery at Jarrow. He was the first great English scholar, and spent his life in acquiring all that the world then knew, and writing it down for others to read and use. At

the time of his death he was busily translating the Gospel of St. John from Latin into English. Seeing how weak he was becoming, the pupil whose duty it was to write from his dictation begged him to stop.

"It is Finished, master."

"I do not know how soon I may be away," said Bede, and the work went on. It continued day by day, though he was very near his end. One morning those around urged him to rest, pointing out that there was only one sentence left to do.

"Write quickly!" said Bede, and again the pupil bent to his task.

"It is finished, master!" he said at last, and then this splendid old man lay back content, and died with the praises of God on his lips.

If great and good men such as Bede had never existed we should have lost much of what History teaches us to-day. Long years after his death the honoured title Venerable was attached to his name.

His works were beautifully written in Latin, and from them we can learn much of what happened in England from the days of the Saxons. Some of the most inspiring stories we so treasure would never have survived but for this historian.



Seeing how weak the Venerable Bede was becoming, the pupil whose duty it was to write from his dictation begged him to stop. "I do not know how soon I may be away," said Bede, and the work went on.

Specially drawn for this work.

THE MAN WHO SERVED SEVEN KINGS



Specially drawn for this work
Dunstan raised himself slowly and painfully from the mud into which he had been flung. He gazed after those who had pulled him from his horse and trampled him in the mire.

A FAIR-HAIRED, blue-eyed boy raised himself slowly and painfully from the mud into which he had been flung. His fine clothes were torn and stained, his body bruised, and his face streaked with blood. Pale and shaken, he looked after those who had pulled him from his horse and trampled him in the mire.

The boy was Dunstan, who in days to come was to be known as "the wisest man in England." Born of rich parents, better educated than most children, he had already proved himself to be clever and ambitious. He read every book that came within his reach, and was famous for his skill upon the harp and his singing of the old songs.

His Magic Harp.

While he was still quite young, the King of Wessex had caused him to be brought to court, but there his knowledge and ability had roused first the jealousy and then the hatred of his companions. It was because they felt bitterly towards him that they had treated him so roughly beside the lonely marsh.

Dunstan did not recover from this attack for a long time. Then he entered a monastery, where he sang,

and studied, and was happy. But there he became yet more famous, for one day, when he had finished playing, he hung up his harp beside a window, and a gentle wind blowing through the strings caused them to give forth music. People said that he was so holy that the angels made melody for him.

Under One King.

But, though his life was peaceful and pleasant within these sheltered walls, Dunstan longed to take a share in the affairs of the world outside. Those were great days in England, for the work begun by Alfred nearly a hundred years before was still going on; slowly but steadily the country was being once more united under one king, and the power of the Danes lessened.

In the end Dunstan got his wish. A young king named Edmund, who had treated him badly, made a sudden vow—at the moment when his horse was about to plunge over a precipice—that he would be good to Dunstan if his life was spared. Because of his escape from that danger he sent for the young monk and made him Abbot of Glastonbury.

So opportunity came to this splendid man, and he seized it eagerly. Soon he had made his monastery famous as a

centre of learning, and had proved that he was fitted for still greater things. Before long he was Bishop of Worcester; later on he became Bishop of London, and at last Archbishop of Canterbury. He showed himself to be wise and good, and carried out many changes which brought lasting benefit not only to the Church, but to the people as a whole.

Loved and Honoured.

Dunstan was a great statesman also, and for many years he was the most important man in all England—more

important even than the various kings who sat upon the throne during his lifetime. He was, in fact, the real ruler of the country, and was both loved and honoured.

It was his advice which guided the land through many difficult years, and it was he who helped to bring back happiness and justice to a united nation in the reign of Edgar the Peaceful—that king who was rowed in a boat upon the River Dee by six men, all kings like himself, and all owning him as their lord.

For Faithful Service.

There are many stories told of Dunstan, but none more striking than the story of how, a few years before he died, he called upon the "oldest counsellors" of England to meet in an upper room, to settle certain disputes. In the middle of their discussions the floor gave way, and only the Archbishop—standing quiet and unmoved upon a narrow beam—was left totally unharmed.

After his death he was made a saint for his wisdom, his piety, and the faithful service which he gave throughout his life to the land that he loved so well.

St. Dunstan is believed to have been a most skilful worker in metals, showing that men even in his far-off times had what we to-day call "hobbies," as a rest from our regular occupation.

Many fine churches in this country are dedicated to St. Dunstan, and there is no more beautiful way of keeping green the memory of a man who lived a good life.



Specially drawn for this work

The oldest counsellors of England met in an upper room to settle certain disputes. In the middle of their discussions the floor gave way, and only the Archbishop—standing quiet and unmoved upon a narrow beam—was left unharmed.

"THE DARLING OF ENGLAND"



W. F. Mansell

KING ALFRED AND THE CAKES

This extremely life like picture, the reproduction of an engraving made from the famous painting by the great Scots artist, Sir David Wilkie, R.A. (1785-1841), shows the well-known historical incident. We can learn much from good pictures, and this one brings home, as nothing else could do the scene when Alfred sought shelter in the hut of a peasant, and was roundly scolded by the housewife for neglecting her cakes and allowing them to burn.

FOUR small boys stood grouped about their mother, who held on her knee that once rare and precious thing known as a book. "I will give it," she said, "to whichever of you first learns to read it."

The boys were the sons of Ethelwulf, King of Wessex, and the youngest of them was Alfred, who was afterwards to become one of the greatest, wisest, most devoted and best-loved rulers that this country has ever known.

In Days of Fear.

The days in which he lived were days of fear and unhappiness, for fierce vikings from those grim lands across the North Sea had begun to do what the English themselves had done three centuries before. In their long ships, urged swiftly on by sails and oars, they swept down upon the shores of our island, burning and killing wherever they went. They were heathens, and they took a savage delight in the destruction of churches and the slaying of Christians.

At first they came only in the sum-

mer, returning to pass the long stormy winter in their own country. But by-and-by they began to make new homes for themselves here, and the English were never free from the terror of these merciless invaders. Towns and villages were sacked and burnt; fertile land was laid waste; Christianity and culture began to disappear, and the work of hundreds of years was undone. More and more of them came, as time went on, and greater grew the sorrow which lay like a shadow over all England. It was to be the life-work of Alfred to break the power of the Danes and bring back happiness to his people.

Alfred and the Cakes.

Much of what we know about this wonderful king comes from the writings of a man who lived through those long, weary years of heart-breaking struggle, and set down what he saw. Here is his description of Alfred as a boy: "As Alfred advanced in infancy and youth, he was comely in person and of a serene countenance."

he was more pleasing than they. His noble birth and noble nature implanted in him from his cradle a love of wisdom above all things."

Alfred was called upon to shoulder his burden quite soon, for, when he was eighteen years old, he had to share the task of leadership with one of his brothers—his father and the other two being dead. Five years later this last surviving brother died of wounds got in one of the frequent fights against the Danes, and Alfred carried on the task alone. In the first year of his reign he fought no fewer than nine battles with the enemy. He was beaten many times, but never lost heart. It was on some day during this sad period that he sought shelter in the hut of a peasant, and was scolded by

the housewife—who did not recognise him—because he let her cakes burn.

'Midst Woods and Swamps.

The few men that remained to him became worn out, and at last he was forced to take refuge at Athelney, a little island among the woods and swamps of Somerset. Here he made careful preparations for a fresh attack upon the Danes, and sent out messengers to urge all his people to join him. On one occasion, being anxious to find out the number and plans of the Danes, he disguised himself as a minstrel and ventured into their very midst.

When the time was ripe he struck a fierce blow at the Danish forces, and defeated them heavily. Then he besieged their camp, and took it. Shortly



THE DANES COMING UP THE CHANNEL

The above is a reproduction from the spirited painting by Herbert Bone. It shows typical Englishmen of Alfred's days watching the arrival of a party of invading Danes. Beset by Danes throughout the early years of his reign, this greatly beloved king eventually conquered the foe. In one year he fought no fewer than nine battles with the enemy, who were heathens sweeping down upon our shores, destroying churches and slaying the Christians.

afterwards they yielded to him, their leader promising to become a Christian and to leave Alfred's kingdom—both of which things he did. He was baptised three weeks later, and Alfred acted as his godfather. Then the Danes retreated to the east, and a boundary line was fixed between their kingdom and that of their conqueror. War broke out again seven years afterwards, but it lasted only a short time, and Alfred was once more victorious. The power of the Danes was broken.

In Winchester Minster.

Alfred was not only the leader of his people in war: he was their judge, lawgiver and teacher. He was also the greatest scholar and writer of his time. In the quieter years which followed the defeat of the Danes, he set himself to make his subjects happier and safer. He rebuilt towns, founded monasteries, and set up schools, even writing the books to be used in them. He studied the old half-forgotten laws of the nation, and made a new code out of the best of



Rischgitz

ALFRED IN THE CAMP OF GUTHRUM THE DANE

Here is another entrancing picture by Herbert Bone. At the end of his long campaign, King Alfred was not only victorious over the Danes, but converted Guthrum to Christianity, and acted as godfather at his baptism. This was not the only occasion on which Alfred entered the camp of the foe. Being very musical, he would disguise himself as a minstrel and boldly mingle in the ranks of the enemy.

them. He translated many books from Latin into English, and started the "Anglo-Saxon Chronicle"—a record of national affairs which was kept chained to a desk in Winchester Minster, and added to year by year.

Never, in all the pageant of our history, has there been a nobler man nor a better king. He died at the age of fifty-two.

THE TRIUMPH OF THE DANES



From the painting by A. Forester.

After many, many years of invasion, pillage and bloodshed, the Danes eventually settled finally in England. One of the first kings after their conquest was Canute, known sometimes as Cnut or Knut, which means a chief or noble. The scene above, photographed from a famous painting, shows Cnut (on horseback, with his standard near by) convoying some of his ships through a canal he had made in England.

IN his council chamber sat King Ethelred—the man without a plan, always at his wits' end for lack of knowing the best thing to do. With him was the band of elders known as the Witan, the parliament of those days. And the subject of their anxious talk was the harrying of this land by its old traditional enemies.

The Danes had grown steadily stronger at home, and they had never forgotten that people of their race had once held almost the whole of England. So year by year their ships had again begun to swoop down upon these shores, and those who manned them had gone to and fro, spreading death and destruction, and leaving famine and terror behind them wherever they went.

Peace by Purchase.

No wonder, therefore, that the Witan was greatly troubled, and the king even more helpless than usual. At last there arose from among the grave-faced counsellors Siric, Archbishop of Canterbury.

"In my opinion," he said, "there is but one way of winning peace, and that is to buy it!"

So was begun the plan which in the end did much more harm than good. A tax of £10,000 was collected

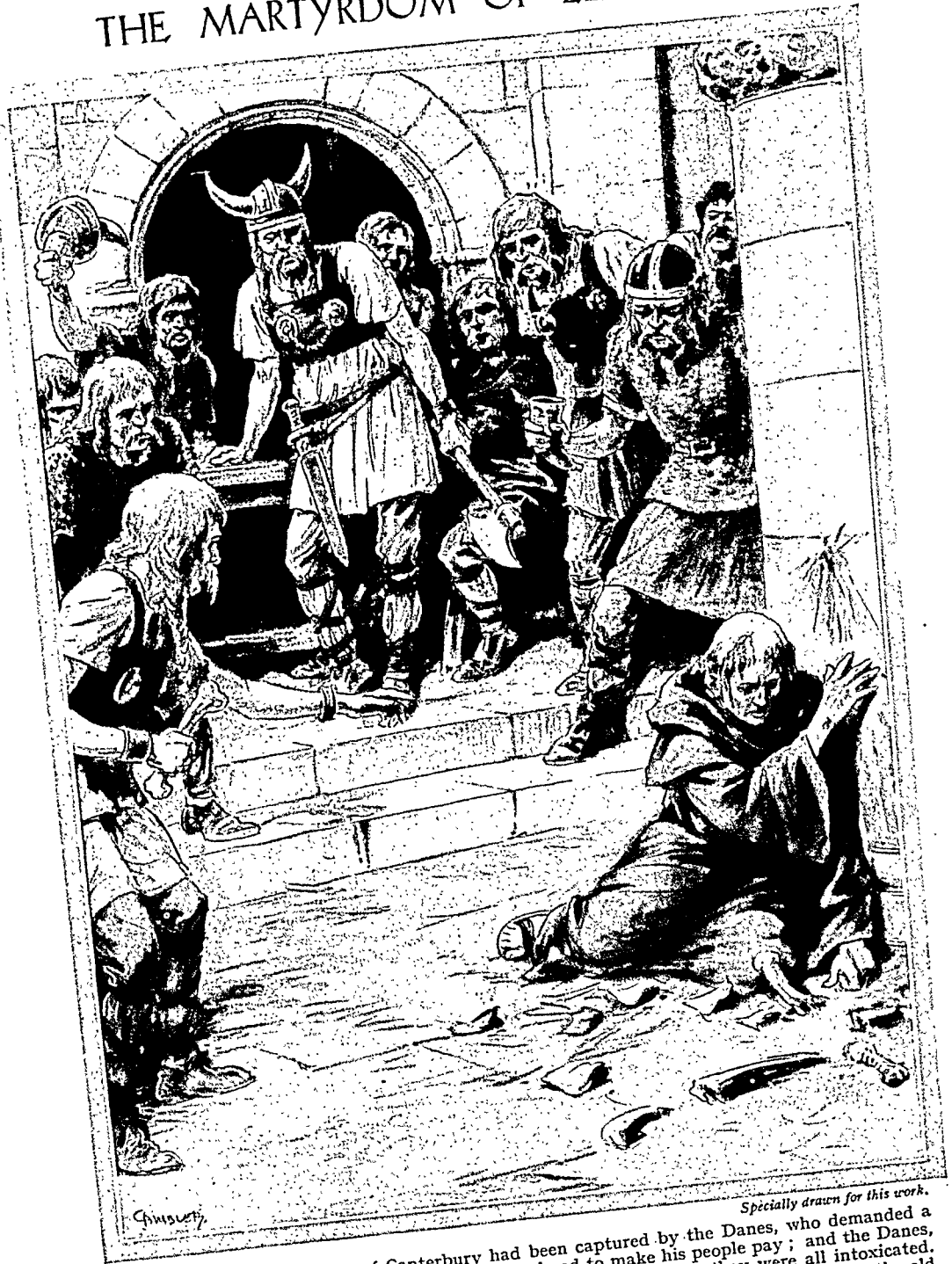
from the people and paid to the Danes as a bribe to them to cease their raiding and slaughtering. But, instead of contenting them, it made them hungry for more. Again and again they returned, and the "Anglo-Saxon Chronicle" records little for those years except the slaying of English people and the ruin of their homes. In the years that followed the "Dane-geld" rose from £10,000 to £48,000, but the money was wasted, for the attacks of the invaders grew more frequent and more bitter.

A Terrible Revenge.

Then Ethelred did a foolish and a wicked thing. He arranged secretly that on a certain day all the Danes who had settled down in England should be murdered. Among the victims was the sister of Sweyn Forkbeard, King of Denmark. Roused to anger, Sweyn gathered a mighty army; and, with his sister's bracelet nailed to the mast of his ship, sailed across to this island to exact a terrible revenge. For four years he and his men raged up and down doing terrible deeds.

On one occasion they captured the Archbishop of Canterbury, and demanded a ransom. But the worthy Elphege refused to make his people pay; and the Danes, to punish him, had

THE MARTYRDOM OF ELPHEGE



Specially drawn for this work.

The venerable Archbishop of Canterbury had been captured by the Danes, who demanded a ransom for his release. The worthy Elphege refused to make his people pay; and the Danes, to punish him, had him brought out on a Sunday evening when they were all intoxicated. They pelted him with the bones of the oxen on which they had feasted. Then, when the old man had fallen helpless to the ground, one of them slew him with a battle-axe.

him brought out on a Sunday evening when they were all intoxicated. They pelted him with the bones of the oxen on which they had feasted, and then, when he had fallen helpless to the ground, one of them slew him with a battle-axe.

Canute Becomes King.

By and by the Danes returned to their home across the sea. But a few years later they came back, and this time they stayed. In a little while Ethelred fled to France, and Sweyn seized the throne. Not long afterwards he died, and his son Canute became king.

You might quite well expect that this would have brought even greater misery upon the land; but, strangely enough, it was the beginning of much better days. Canute gradually became lord of all England, and he ruled it wisely and well. Unlike his father, he was a Christian, and he rebuilt the cathedrals and monasteries, and founded many churches. He also made a new set of laws, and saw to it that they were kept.

He brought back to this harassed, stricken land the same quiet and happi-

ness that it had enjoyed in the reigns of Alfred the Great and Edgar the Peaceful, and is rightly counted among the best kings of England.

His wisdom and strength are well shown by the well-known story of how he answered certain nobles who, to flatter him, told him that he was master not only of the land, but of the ocean also.

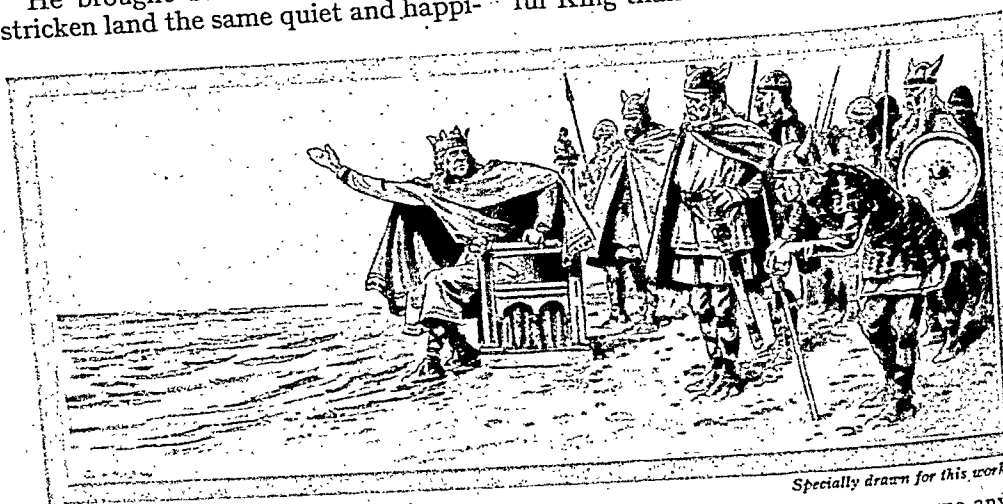
"Bring me a chair," he said, with a twinkle in his eye, "and place it by the edge of the sea!"

A King without a Crown.

Then, with his courtiers around him, he sat in the chair, and forbade the water to come any nearer. When the waves were washing about his feet, he pointed out how foolish were the words that had been spoken about him by his followers.

"There is but one Lord of land and sea," he said, "and it is God, who rules everywhere!"

And from that day on, so the old writers say, he never wore his crown, but hung it up before the altar in a great cathedral as a sign of his allegiance to a far greater and more powerful King than himself.



Specially drawn for this work.

King Canute, with his courtiers around him, sat in a chair and forbade the sea to come any nearer. When the waves were washing about his feet, he pointed out how foolish were the words that had been spoken concerning him. "There is but one Lord of land and sea," he said, "and it is God, who rules everywhere."

THE LAST CONQUEST OF ENGLAND



Specially drawn for this work.

The Norman Duke invaded England, and the English were beaten, largely because the Normans pretended to run away, and lured them from their strong defence on the Sussex Downs. At the Battle of Hastings, King Harold was slain by an arrow from one of the foreign archers. The Norman landing at Pevensey is here illustrated.

ON a small island in the midst of that marshy region known as the Fens, a little cluster of men huddled round a fire. All about them sprawled others, sunk in the deep slumber that comes to those who are weary to the point of utter exhaustion. Many bore upon their bodies the marks of battle, and from time to time a groan escaped from some sleeper turning uneasily to seek an easier position on the hard ground. For miles on every side stretched the vast swamp, overgrown with reeds, and cut in all directions by deep channels of water—black, sullen and forbidding.

A Handful of Rebels.

Here, remote and unapproachable, was the camp of Hereward—whom men called "the Watchful," because none had ever caught him unawares. With him was gathered that remnant of stubborn English who would not yield to the Norman invaders. And, try as they might, King William and his men could not break the resistance of this handful of rebels; for rebels, strangely enough, they had become, though fighting to defend their native land.

Five years earlier that gentle sovereign, Edward the Confessor, had died, and Harold, Earl of Wessex, had been chosen to rule in his stead. But his reign was short and troubled, for the news of his coronation roused to anger the most ambitious man and ruthless enemy of his time—Duke William of Normandy.

Invaders at Hastings.

He was the more angry because the Confessor, who had no heir, had promised that he should be the next king of England. And, according to an old story, even Harold himself had been entrapped into an oath to the same effect, when wrecked upon the coast of France some time before. After the taking of that oath William had lifted the cloth on which Harold had solemnly laid his hand, and pointed to the many holy relics that had been secretly placed beneath it to make the pledge more binding. In breaking that sacred promise, Harold gave good excuse to William to invade England, and the Norman duke made full use of it. So Harold, hurrying back from the north, where he had just defeated an army of invading Norsemen, found himself

called upon to fight these new invaders at Hastings.

There, as you know, the English were beaten, largely because the Normans pretended to run away, and lured them from their strong defence on the Sussex Downs. There, too, Harold was slain by one of the arrows which the foreign archers, at William's command, had shot high into the air, so that they might fall "like bolts from heaven."

'Twixt Humber and Tees.

On Christmas Day in that same year the Norman duke was crowned King of England, and trouble fell once more upon this country. William was a man of giant stature and vast strength, uncouth in his manners and furious in

his anger, and none has ever ruled more sternly.

During the first few years of his reign the English rose in rebellion many times, but gradually they were crushed into submission. On one occasion William received news that the 3,000 men who formed the garrison at York had been slaughtered, and he swore a great oath to "exact vengeance sixty-fold for every one of them." He marched north with an army, and ravaged all the region between the Humber and the Tees.

More than 100,000 people died of cold and hunger in the barren waste he left behind him, and for nine years all that part of the land remained idle and forsaken. Even half a century later ruined towns and deserted fields re-



Rischgitz

THE BATTLE OF HASTINGS

The scene at the height of the battle that brought about the last conquest of England. The picture is after an engraving from a well-known painting, and the death of Harold is shown. The Norman duke (afterwards, William the Conqueror) commanded his archers to shoot high in the air, and it was one of these missiles, falling "like a bolt from heaven" that cost the English king his life.

CORONATION OF WILLIAM I.



William, Duke of Normandy, was crowned King of England on Christmas Day in the year of the Battle of Hastings. The coronation took place at Westminster Abbey, and the scene is vividly portrayed in the above painting by Sir John Gilbert, R.A. (1817-97). William the Conqueror was a man of furious temper who ruled with great sternness. It was he who ordered the compilation of the Domesday Book, to the great indignation of the English.

called the Conqueror's dreadful revenge. The last stand of the English was that of Hereward the Wake at Ely, but in the end William built a great causeway two miles long of stones and trees and skins, and, after numerous defeats and the loss of many men, overcame that resistance also.

The Domesday Book.

Before the coming of the Normans the land had belonged to the king, to the great nobles, to monasteries, or to smaller owners. But William claimed the whole of England as his, and gave the land away just as he wished. Some of those who had held estates before were allowed to buy them back; some lost them altogether. The greater part of the land was divided out among the barons, on condition that they would fight for the king if he called upon them to do so, and they let their estates out to others—in smaller portions, of course—on exactly the same terms.

According to the custom of those times, every holder of land had to swear to be faithful to the overlord from whom he held it, but William, in order to prevent the great landowners from leading their tenants against himself, made every holder of land swear faithfulness to *him*. Anybody, therefore, who fought against the king, even at the command of his overlord, was henceforth guilty of treason, and the punishment was death. By means of this clever plan William turned the whole nation into a vast army, every man of which was pledged to fight *for* him, but not *against* him. In the latter part of his reign, when the barons became

dissatisfied and wanted to rebel he was very much helped by this arrangement.

One of the most important things that the Conqueror did was to cause the Domesday Book to be made. Everybody who held a piece of land, no matter how small it might be, had to pay a sum of money to the king, and, so that no one should escape from the payment of this tax, William "sent his men over all England into each shire." It was their duty to find out "how many hundreds of hides* (of land) were in the shire, what land the king himself had, and what stock upon the land . . . what, or how much, each man had, who was an occupier of land in England, either in land or in stock, and how much money it were worth." The information was all written down, and the complete record which resulted is one of the most useful ever made. It has served for many purposes besides the one for which it was intended.

Nothing Left Out.

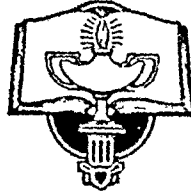
But the making of the Domesday Book caused great indignation. The people hated having their affairs poked into, and the "Anglo-Saxon Chronicle" finishes its account of the matter by saying:

" . . . there was not one single hide, nor a yard of land, nay, moreover—it is shameful to tell, though he thought it no shame to do it—not even an ox, nor a cow, nor a swine was there left, that was not set down in his writ."

* A "hide" of land was about 120 acres in extent.



The Romance of History



England in the Middle Ages



Rischgala

By permission of the Corporation of London.

THE BATTLE OF THE STANDARD

Sir John Gilbert, R.A., painted this beautiful picture which hangs in the Art Gallery of the Corporation of London, among many other fine scenes from the same brush. The Battle of the Standard was fought near Northallerton, Yorkshire, between the English and the Scots. The Archbishop of York gathered an army under the banners of Durham, York, Beverley and Ripon, and these were fastened on a pole beneath the Cross, hence the name of the battle.

TWO=SCORE TERRIBLE YEARS

"Then was corn dear, and flesh, and cheese, and butter; for there was none in the land. Wretched men starved of hunger. . . . To till the ground was to plough the sea. The earth bare no corn, for the land was all laid waste, and men said openly that Christ slept, and His saints."

SUCH, in the words of the "Anglo-Saxon Chronicle," was the state of affairs in this land of ours only half a century after the death of the stern Conqueror. So long as William the First was alive the Norman barons, strong as they were, had a master who was still stronger. But as soon as that check upon their unruliness was removed they began to quarrel and fight among themselves, and they treated the English very badly indeed.

Things were made easier for them

because before long the country was disturbed by a civil war which lasted fifteen years. The son and heir of Henry the First (grandson of William the Conqueror) was drowned while returning from France with a drunken crew which ran the famous *White Ship* upon a rock. Henry arranged that his daughter Matilda, afterwards called "The Lady of the English," should reign after him, but her cousin Stephen, though he had promised to support her, seized the crown. While the matter was being fought out the barons were busy getting greater power for themselves.

Castles for the Barons.

Over a hundred strong stone castles were built in Stephen's reign, and the barons were guilty of the most abominable outrages. The "Anglo-

Saxon Chronicle" gives a vivid picture of these dreadful years:

"Then took they those whom they supposed to have any goods, and threw them into prison, and inflicted on them unutterable tortures. Some they hanged up by the feet, and smoked them with foul smoke; and some by the thumbs, or by the head. They tied knotted strings about their heads, and twisted them until the pain went to the brains. They put them into dungeons, wherein were adders, and snakes, and toads, and so destroyed them. . . . I neither can, nor may I tell all the wounds and all the pains which they inflicted on wretched men in this land."

The war between the royal cousins dragged on and on. Once Stephen was captured, and sent off to Bristol loaded with chains. Not long after he had

been set at liberty he besieged Oxford, and Matilda got away only by dressing herself in a white robe, which enabled her to escape over the snow-covered ground without being seen. It was arranged at last that her son should be the next king—and a much more successful sovereign he proved himself to be when, as Henry the Second, he ascended the throne in the next year.

Trial by Jury.

He set out at once to deprive the barons of their power, and to put an end to their cruel deeds. Nearly 1,200 castles were pulled down, and the bands of hired soldiers kept by the great nobles were dispersed.

To ensure justice for the people as a whole, judges were appointed to travel all over England, their duty being to try cases where one man was said to



In the reign of King Henry the Second, nearly 1,200 castles were pulled down and the bands of hired soldiers kept by the great nobles dispersed, the barons being deprived of their power, so that an end was brought to their cruel deeds

Specially drawn for this work



Specially drawn for this work

King Henry suddenly became enraged. 'Are there none of the cowards whom I feed at my table,' he said, 'who will rid me of this troublesome priest?'"

have wronged another. Trial by jury was also set up in place of the old barbarous custom of testing a person's guilt by throwing him into water to see if he would drown, or making him pick up a piece of red-hot iron to find out if it would burn him.

The system by which every landholder had to fight for the king if called upon was also changed. This had often meant that the fields went untended and harvests remained ungathered. A new arrangement was made that a man might pay a sum of money if he liked instead of going out to fight, and that suited everybody. The tenants could stay on their land and look after it, and with the money which they paid

the king could hire professional soldiers.

Thomas à Becket.

Henry the Second would have been able to do still more, except that he made a bad mistake. He wanted to fight the power of the Church, and for that purpose he chose as Archbishop of Canterbury a man named Thomas à Becket, the Chancellor, and the most important man in the land. Until then Becket had loved riches, and fine dress, and other worldly things, although he was a priest. Once, when he went to France on a royal errand, he took an escort of 1,000 persons, with waggons and horses loaded with money and gold

plate and splendid clothes. But after he became the chief officer of the Church he strove for the Church against the king.

He and Henry quarrelled seriously about certain matters, and at last, hearing that the Archbishop had gone back on an agreement that had been reached with great difficulty, the king lost his temper and asked "if there were none of the cowards whom he fed at his table who would rid him of this troublesome priest." Four of his knights set out for Canterbury at once, and slew Becket in the most shocking manner at the steps of an altar. Through this Henry lost the support and sympathy of almost everybody, and his position was very much weakened.

The Rising of the Barons.

One important result was a rising of his Norman barons. He was defeated in the conflict that followed and had to sue for peace. When the treaty was signed he asked for the list of those who had rebelled against him, and was heart-broken at finding upon it the name of his favourite son. The shock of that, added to his previous disappointments and troubles, made him ill, and he died shortly afterwards murmuring, "Shame, shame on a conquered king!"

But, though he failed to accomplish all he set out to do, Henry the Second achieved much, for he broke the power of the Norman barons, and repaired the damage of the dreadful years that had gone before him.



Rischgutz

THE MARTYRDOM OF THOMAS À BECKET

As a result of King Henry's hasty words, four of his knights, anxious to win their king's approval, set out for Canterbury at once, where they slew Becket in the most shocking manner at the steps of an altar in the Cathedral. The above illustration of this terrible happening is reproduced from the painting by C. H. Weigall.

THE GREAT CHARTER



RICHARD I AND SALADIN AT ASCALON

Rischgitz

Three times did King Richard the "Lionheart" set out upon crusades to capture the Holy Land from the Turks. At the Battle of Ascalon Richard and his opponent Saladin, Sultan of Syria and Egypt, met in a personal conflict. In Bible days Ascalon was one of the chief cities of the Philistines. It was the birthplace of King Herod. This splendid picture is by A. Cooper, R.A.

A COLD-HEARTED, selfish man sat alone in a quiet room in a palace, and his thoughts were cunning and base. It was John, nicknamed Lackland, scheming how he might take for himself the crown of his brother, Richard the First.

Richard the Lion-hearted.

Four years before, that great soldier whom men called "The Lionheart" had set out upon the third of the expeditions known as Crusades, the purpose of which was to capture the Holy Land from the Turks. Two of them had already failed; for, though multitudes had given themselves to this sacred cause—ever since the time when the preaching of Peter the Hermit had stirred all Europe a hundred years earlier—the disordered bands of zealous people who marched across the continent, bearing upon their breasts the cross that was their badge of service, were not able to defeat the armies which faced them at the end of their long journey.

Then the Third Crusade had been planned, and there was no one more eager in the matter than Richard, who was so much keener to fight than to

govern that of all the ten years of his reign only six months were spent in England. The King of France and the Duke of Austria had joined with him in his holy war, but from the outset things had gone badly, owing to quarrels among the leaders. In the end the two sovereigns had returned home, leaving Richard to complete the task alone. This he had been unable to do, and, when his army was only about thirty miles from Jerusalem, he had been obliged to turn back. In his grief and disappointment he rode to the top of a hill from which Jerusalem was visible, and, with tears in his eyes, lamented his own unworthiness.

False to his Father.

On his way back to England Richard had been captured, and was now held prisoner by the Duke of Austria, and it was this misfortune that John wished to turn to his own advantage. Dare he seize the kingdom? What would happen to him if he did so, and Richard was able to get free after all?

But the plans of the faithless John—false already to his father and now false to his brother—were doomed to disappointment, for by dint of great

sacrifice the freedom of England's king was purchased. To provide the stupendous sum that was needed, every one of his subjects was compelled to contribute a quarter of his income, and even the sacred vessels in the churches were sold.

Though Richard knew of John's treachery he forgave him, and then, two months after reaching home, he set out to wage war against the King

of France. But, while he was besieging the castle of one of his own vassals—to win a treasure dug out of the ground which he claimed as his—he was struck by an arrow and died of the wound. On his death-bed he sent for the archer who had done the deed.

"What harm did I ever do to you, that you should kill me?" he asked.

"You slew my father and my two brothers," the man replied, "and, now that I have had my revenge, you can do with me as you will."

Richard, who always admired a brave enemy, ordered him to be set free, but the king's sister had the man tortured and put to death, nevertheless.

Normans and English.

Ever since the coming of William the First there had been two distinct nations in this country—the Normans, who were rich, satisfied and powerful; the English, who were poor, unhappy and helpless. The one were masters; the other were servants, and despised at that. But now the two races were made one, by the weakness and folly of John, king at last, though not the real heir to the throne.

During the seventeen years of his reign he had three great quarrels. The first was with the King of France; and, in fighting with him, John lost Normandy altogether, which meant that for the first time the Normans on this side of the Channel looked upon England as their home.

John's second quarrel was with the Church. The Archbishop of Canterbury being dead, the clergy chose a successor. But John refused to accept him, and chose another.



PRINCE ARTHUR AND HUBERT

Prince Arthur, the son of Richard the Lionheart, was captured by John and kept in the custody of Hubert de Burgh. He was later released and fled to France. Hubert was executed for his loyalty to Arthur.

KING JOHN SIGNING MAGNA CHARTA



By permission of the Fine Arts Publishing Co., Ltd.

This famous picture, which was painted by Ernest Normand, now hangs in the Royal Exchange, London. It depicts the scene on June 15th, 1215, when King John was compelled to set his seal to the greatest charter in English history. The event took place on a little island in the Thames, opposite the meadow that is called Runnymede and within a short distance of Windsor. The charter provided for the needs of every section of the people.

body else. The Pope, to whom the matter was referred, appointed a wise and good Englishman named Stephen Langton. John forbade him to land in England, and began to ill-treat the clergy and to seize church lands by way of revenge. Then the Pope ordered the churches to be closed and no services held. For five years the bells were silent, and the dead were buried in ditches and waste land.

To Take the Throne.

John's answer to this "Interdict" was to persecute the clergy still more bitterly, so that at last the Pope declared that John was no longer king, and that he was to be considered as outside the Church altogether. He encouraged the King of France in a plan to take the throne of England, and that terrified John so much that he gave in utterly. He resigned the crown, and humbly received it back (in return for all sorts of promises) from the Pope's messenger.

The third and worst quarrel was with his own subjects. His weakness, cruelty and selfishness had lost him the sympathy of both Normans and English; his cowardice in the affair with the Pope disgusted them. Having failed to get his way with anybody else, he tried to bully his nobles, but in this, too, he was unsuccessful. With Stephen Langton, now Archbishop of Canterbury, as one of their leaders, they drew up a charter, and demanded that the king should sign it.

"Why do they not ask for my kingdom at once?" cried John when he saw it.

A Nation Against Him.

But he was helpless for all his rage. To support him he had none but hired foreign soldiers and seven out of all the nobles and leaders of England; against him was arrayed a whole nation.

So, on June 15th, in the year 1215, the greatest charter in English history was signed on a little island in the Thames, opposite the meadow that is called Runnymede, and hard by Windsor. It contained sixty-three articles, and provided for the needs of every section of the people—barons, commoners, the Church, the towns and boroughs, and the traders. Perhaps the most important part of all is that which states that "justice is not to be denied, delayed or sold," and that "no free man is to be unjustly imprisoned, punished or outlawed."

John never intended to keep the charter, but a committee of twenty-five barons was set up to see that he did so.

"They have given me twenty-five over-kings!" he shrieked after his return from the signing, and in his rage he tore at his beard and his clothes, threw himself on to the floor, and gnawed at the matting upon it.

So was set, upon that surest of foundations, the united feeling of a whole nation, the "corner-stone" of the liberty which England enjoys to-day.



THE BEGINNING OF PARLIAMENT



Specially drawn for this work.

The representative of the Pope, on behalf of his master, stepped forward with a plain circlet of gold, which he placed upon the child's head. The crown which should have served as the boy's badge of kingship lay at the bottom of the Wash—so the gold band was used in its place.

VERY grave and still he sat, that small boy of nine. Around him stood a little group of men, grave likewise, and somewhat anxious. Seven of the eight were bishops or barons, the other was that important person, the representative of the Pope. It was he who, on behalf of his master, stepped forward with a plain circlet of gold, which he placed upon the child's head. The crown which should have served as his badge of kingship lay at the bottom of the Wash—lost, with all the rest of his father's baggage during a sudden and desperate flight—so the gold band was used in its place.

Two Good Wise Men.

Such was the coronation of Henry the Third at Gloucester. During the years which followed, the government of the land lay mainly in the hands of two wise and good men, but by and by the king came of age, and soon afterwards he was made to believe that the one who was still alive, and who held the high and responsible post of Justiciar, had been false to him.

Without examining the facts properly, and unmindful of the long and faithful service which this man had given to him, Henry sent an officer to

arrest him. The Justiciar, whose name was Hubert de Burgh, had taken refuge in a church. The officer sent for a smith to rivet the fetters on his prisoner, but the smith, seeing who it was, flung down his tools.

"Do what you will with me," he said, "but I will die any death before I fasten iron on the man who saved England!"

Favourites of the King.

This ungrateful conduct on the part of Henry the Third explains something of his character. He was weak and foolish, and he cared nothing for his kingly duties. After he took the control of affairs into his own hands there followed twenty-six years of very bad government. He was surrounded by foreigners, relatives of his mother and his wife, and these in turn invited other foreigners, until the court was full of them, all hating and despising the English. Henry listened to the evil counsels of these people, bestowed titles and high offices upon them, and gave to them vast sums of money extorted from his subjects.

He was always in need of money to lavish upon his favourites, to pay for his wars, and to meet the demands of

the Pope's representatives, who sent it to Rome. This was fortunate in one sense, because it united the people of England in another great effort to secure better government. For many years feeling against the king's wastefulness and folly grew steadily. On one occasion, when the barons had refused to pay for a particularly stupid plan, Henry turned to the Earl of Norfolk:

"I will send threshers and thresh your corn for you!" he said.

"And I will send you back the heads of your threshers!" replied the angry noble.

The King and the Earl.

Matters grew gradually worse, until at last war broke out between the king and a large part of his subjects. The leader of those who were against him was an honest and wise man named Simon de Montfort, who was Earl of Leicester. His followers beat the king's army at Lewes, and Simon immediately set about calling together a gathering which should really represent the whole nation. There had never been anything of the sort before, for the Witan of the Saxon kings had consisted merely of the great men, not chosen in any

special way, while in Norman times the sovereigns had for the most part ruled with the help of a small group of officials whom they themselves appointed. The "common" people had never been given a chance to share in national government, but a strong feeling had grown up that those who paid the money which the king and his officers spent should have a voice in deciding how that money should be spent and how it should be obtained.

When Parliament First Met.

So, in the year 1265, the first real Parliament met. The barons, as being the great landholders, were summoned separately and by name. The bishops, as representing the Church, were also bidden to attend. In addition, every shire was called upon to elect two knights, and certain boroughs two citizens, to represent them. Simon de Montfort's aim was not only to discuss the matter of collecting and spending tax-money, but to unite the



R. N. BAKER

Specially drawn for this work

A smith was sent for to rivet the fetters on a prisoner, but the smith, seeing who it was, flung down his tools "Do what you will with me," he said, "but I will die any death before I fasten iron on the man who saved England."

AN EARL DEFIES HIS KING



King Henry turned to the Earl of Norfolk. "I will send threshers and thresh your corn for you!" he said. "And I will send you back the heads of your threshers!" replied the angry nobleman.

Specially drawn for this work.

nation into one great partnership. And, just as he planned, so it was carried into effect.

But Henry the Third, like other kings before and since, objected strongly to having power taken out of his hands. War broke out again soon afterwards, and Simon de Montfort was killed. Then the king died also, and Edward the First ascended the throne. He was as good and successful a sovereign as his father had been bad and unsuccessful, but of all the wise things that he did, nothing was more notable than the steps he took to set up a Parliament on the best and surest foundations.

The Model Parliament.

In 1295 there was called together what is often known as "The Model Parliament." Edward believed that "what touches all should be looked to by all," and he translated this opinion into action. He issued summonses to the archbishops, bishops, earls and barons.

All these together formed the "Estate" (or House) of Lords. He also instructed the sheriff of each

county "without delay to cause to be elected from the county two knights, and from each borough two burgesses (*i.e.*, citizens), and to see that they come to Us at the aforesaid day and to the aforesaid place."

Mother of Parliaments.

These knights and burgesses—representing *every* shire and *every* borough, formed the "Estate" (or House) of Commons. The lesser clergy were also directed to send representatives; but, though they did so at first, they soon preferred to let such matters alone, and gradually ceased to have any share in the debates and doings of the Houses of Parliament.

So stage by stage there was set up, largely through the folly of some sovereigns and the great wisdom of others, that historic and wonderful body which has for centuries served as an example of national government to other nations, and which has justly been called "The Mother of Parliaments"; so much so that it has become a pattern to the world, and is looked up to by every country.



Henry the Third, like other kings before and since, objected strongly to having power taken out of his hands. War broke out again soon afterwards and Simon de Montfort was killed.

THE FIRST PRINCE OF WALES



Specially drawn for this work

"If any lord conquers land in Wales, he may keep it for himself," said King William. So the Norman lords on the borders fought fiercely with the Welsh, trying to take their land from them.

AWAY in the mountainous corners of Wales lived people belonging to the old British race, men who had not been conquered by either Saxons or Normans. The English called them Welsh, a word which means "foreigners."

These people were fierce and wild, fond of poetry and singing, strong and brave. When William I. had been King of England, he had given his fiercest barons the lands along the border of Wales, so that they might spend their time and energy fighting the Welsh, instead of stirring up trouble in England.

"If any lord conquers land in Wales, he may keep it for himself," said William.

Along the Border.

So the Norman lords on the borders fought fiercely with the Welsh, trying to take their land from them. When they conquered a piece of land, they built a castle there to keep it, and so many fortresses sprang up that South Wales is often called "The Land of Castles."

When Edward I. was king there lived a Welsh prince called Llewelyn. He dwelt in the north of Wales, in the mountainous country round Snowdon. He was bold and daring, and won so many battles that the Welsh called

him in words of honour the Prince of Wales, though his right title was Lord of Snowdon.

The Heights of Snowdon.

Edward sent a message to Llewelyn, commanding him to come and pay him homage, and acknowledge him as overlord of Wales, but the Prince angrily refused.

Then Edward took an army, and led it into Wales. Llewelyn was driven back into the heights of Snowdon, and at last, when he was half-starving, he surrendered, and gave his promise to do homage to Edward.

But it was not long before the bold prince rose again, joined by his brother David, and rebelled against the English rule. Edward, as soon as he heard of this, took another army, and marched along the north coast, determined to conquer the Welsh completely, and make the land his own from end to end. He commanded his fleet to sail to the Island of Anglesey, and meet him there with provisions for his army.

Cutting down the Woods.

The ships obeyed. They sailed to Anglesey, and took the island. "Ha!" said Edward, "Friend Llewelyn has lost the first feather from his tail!"

Then eastward he went, and with his army marched a host of a thousand woodcutters, whose duty was to cut down the woods in the mountain passes, so robbing the Welsh of their shelter. Llewelyn was driven back, but at last he made his way to the south, intending to gather an army there.

One day an English knight met him, and the two began to fight. The English-

man did not even know who his foe was, and the two fought to the death. Llewelyn was killed, and the Welsh lost their brave leader. The next year his brother David was also killed, and then Wales belonged exclusively to Edward.

A String of Castles.

He did not find it easy to rule the turbulent people, and he built a string of castles in the north of Wales to keep his hard-won realm. Their ruins still stand—Conway, Harlech and Carnarvon Castles along the coast, and Beaumaris Castle in the Isle of Anglesey.

Whilst Edward was in Wales subduing the Welsh, he announced to them that he would give them a prince of their own—so an old story says. This prince should be born in Wales, and should speak no English.

At that time his eldest son, who afterwards became Edward II., was born at Carnarvon. The King took the baby in his arms and showed it to the people.

"Here is your Prince," he said. "He was born in Wales, and he can speak no English!"

So the little English prince became the first Prince of Wales, and to this day the same title is borne by the eldest son of the King of England.

It was soon to be seen that under English rule Wales prospered more and more. She kept her own laws in rural parts, but the towns came under the control of England and many Englishmen were made to live in them.



Rischgitz.

THE FIRST PRINCE OF WALES.

Whilst Edward I. was in Wales his eldest son, who afterwards became Edward II., was born at Carnarvon. At once the King took the baby in his arms, carried him to a prominent place and showed him to the people. "Here is your Prince," he said. "He was born in Wales and he can speak no English!" So the little English prince became the first Prince of Wales. Our illustration is a reproduction from the well-known picture by Morris.

THE HERO KING OF SCOTLAND



THE LAST MARCH OF EDWARD I.

This picture, painted by Bell Scott, illustrates that romantic historical episode when King Edward I. of England led a third army against the bold Robert Bruce of Scotland. The King, knowing that he was dying, ordered his men to carry him at the head of the army; so that, even when he was dead, he might still lead his men against the enemy.

KING EDWARD I. wanted to rule over Scotland as well as over England and Wales. The Scots loved freedom, for they were fierce and courageous, and hated to bow to any other King but their own. So Edward tried first by peaceful means to win Scotland, and his chance came when the Scottish King died, and left the throne to his little grand-daughter.

The Maid of Norway.

She was a Norwegian Princess, only three years old, called the Maid of Norway. Edward said that his son, the Prince of Wales, should marry her, and then England and Scotland would be one.

So he commanded that a ship should be sent to fetch the little girl. On board he put gingerbread, sugar-candy, fruit and nuts, for he thought she would like them. But the little Maid did not reach England alive. She fell ill and died on the way.

Then there was no direct heir to the Scottish throne, so the Scots asked Edward to choose a king for them. Edward chose a man called John

Baliol, and bade him do homage to him for the kingdom of Scotland, and acknowledge himself to be the King's man.

But the Scots, proud and fierce, hated to think that Edward was overlord to their King, and when a quarrel came between France and England, the Scots told the French King that they would fight for him against the English.

That meant war between Scotland and England. Three times Edward I. brought his army to Scotland, meaning to conquer it, but he could not succeed.

The first time he defeated the Scots in a battle, and took away from Scone the "Stone of Destiny," on which every Scottish King sat to be crowned. Edward put it in Westminster Abbey, and it is still there, under our Coronation Chair. The Scots were sad to lose it, for to them it was a great treasure, and legend said that it was Jacob's pillow.

To Lead the Scots.

John Baliol fled, and a humble knight, William Wallace, rose up to lead the

Scots. He trained his countrymen well, and made them into an army, which drove out the English governors that Edward had sent to rule Scotland after Baliol's flight. But soon Wallace himself had to flee away from an English host, and the brave man ended his days in the hands of his enemies, who hanged him as a traitor.

Still the Scots would not surrender to the English King, and another hero now rose to be their leader. He was a lord, Robert Bruce, and the Scots crowned him as their King. He fought fiercely against the English, and though he was often defeated and had to wander about the countryside, hiding from his foes, he would not give up his struggle to set his country free.

Black Douglas.

Bruce might well have lost heart, for his wife and child were captured, and made prisoners by the English, his three brothers were killed, and often he

himself did not know where he would sleep that night. But still he went on.

Other lords, strong and courageous as Bruce, gathered round the determined leader. One of them, very dark and tall, was called Black Douglas. He was a true friend to Bruce and fought so boldly that his name was terror to the countryside. Mothers in the north of England used to sing a song to their children at night, bidding them not be afraid of Black Douglas.

"Hush thee, hush thee, do not fret thee,
The Black Douglas will not get thee,"

they sang.

King Edward, now an old man, resolved to lead a third army against the bold Robert Bruce. When he had reached the border he died. When he knew he was dying, he ordered his men to carry his bones at the head of the army, so that even when he was dead



THE TRIAL OF WILLIAM WALLACE.

Sir William Wallace trained his fellow Scots and made them into an army, which drove out the English governors. Soon, however, Wallace himself had to flee away from an English host, to whom he was betrayed. He was taken in chains to London and the above scene shows his trial at Westminster Hall, where he was sentenced to be executed as a rebel and traitor. The picture is by D. Machise, R.A.

Rischgitz



Specially drawn for this work.

Edward II. roused himself, gathered an army together and went to fight against the bold Scots leader. A battle was fought by the little stream of Bannockburn, and there Bruce defeated the English King, winning a great victory over his foes.

he might still lead his men against the enemy. His grave is in Westminster Abbey, and on it is written :—

“ Here lies Edward, the Hammer of the Scots. Keep troth.”

Edward I. wished his son, Edward II., to go on with the conquest of Scotland, but the new King was not such a strong, powerful man as his father. He stayed in his own country, and for seven years paid no heed to the dead King's command.

In that time Bruce steadily went ahead with his work, and little by little he won back Scotland for the Scots. Then, in the year 1314, he marched on the last fortress that still held out against him—the castle of Stirling.

Over the Border.

Then at last Edward II. roused himself, gathered an army together, and went to fight against the bold Scottish leader. A battle was fought by the little stream of Bannockburn, and there Bruce defeated the English King,

N.P.K.

winning a great victory over his foes. Now he was, indeed, King of Scotland.

King Robert was not yet quite content. He wanted to force the English to say that Scotland was free, and that the Scottish King was not their man. So when Edward II. had died, and his young son was on the throne, Bruce once more went on the warpath. He rode over the border, and began to harry the people there.

Edward III. marched against him with an army, but he was no match for the Scots. The English had to take heavy wagons, loaded with food, about with them. The Scots rode here and there on swift ponies. They killed the cattle in the fields for food, and they made themselves biscuits from the oatmeal that every man carried with him in a bag.

The English army could not keep up with the swift-riding Scots, and at last peace was made with Bruce, and the English promised never again to claim that their King was overlord of Scotland.

K K

THROUGH ENGLAND IN THE MIDDLE AGES



The rivers were crossed by fords, round which clustered a few dwellings, for all travellers had to come to the fords. From these clusters grew villages and afterwards towns. That is why the names of so many of our towns end in the word "ford".

WHAT was England like in the Middle Ages? Was it very different from nowadays? Let us take a ride through Mediæval England and see for ourselves. We will look at the houses, the roads, the towns, and the people, and see exactly what they are like.

We cannot take a train, for there is none. Railways have not even been thought of yet. Most people ride on horseback; indeed, that is the only way of getting about, if we wish to travel from one place to another, for there are not many roads that are good. Most of them are simply lanes or bridle-paths. In wet weather these are impassable; for they are so deep-cut that the rain turns them into muddy swamps.

Through Miles of Forest.

We can ride many, many miles without seeing a town of any sort, for the population of the whole of England in the Middle Ages was less than the population of London now. There were no big towns, as we know them. Even the biggest were no more than large villages.

We ride across green meadows, through miles of forest, over long stretches of moor and across rivers.

We cross these at the fords, and we notice that there are a few dwellings there, for all travellers have to come to the fords.

If we were to visit the same places now, we should find large towns, and we could easily guess why. The few houses of the Middle Ages increased in number, as more travellers forded the river at that point. Soon a small village appeared, and perhaps a bridge was built over the river. Then the village grew larger, as more and more people came to trade at the fording-place. Then it developed into a town, and became *Oxford*, *Bedford*, *Stratford*, and so on. You will know now why the names of many towns end in "ford."

Although we ride through plenty of green meadows, we see very few ploughed fields. There was little arable land in those long ago days, and the system of cultivation was quite different from now. We may see, as we ride, the land outside a village divided into three large fields. One strip will be plough-land, one will be meadow-land, and the third will lie fallow. The villagers each had a strip of all three, but the system was not good. If one man neglected his plot, and allowed weeds to grow on it, all the others would

offer. If his cows got loose, they might destroy his neighbour's plot—for no man was allowed to grow a hedge, or put up a gate.

Round the Maypole.

Let us ride to the village in the distance. Outside it are the three large fields, and a few villagers are working there. Here are some cottages, though they seem more like huts to us, and we should not care to live in them. They have no glass windows, nor have they any chimneys. Then we pass to the village green, and see the cross in the middle of it. There may be a maypole nearby, for in those times the first of May was always a holiday, and folk danced merrily round the maypole.

We see the church, which perhaps

may not look very different from our own church at home, if it is a very old one. In the distance is the house of a country knight. It is called a manor house, and the whole village belongs to the lord who lives there. It is a well-built place, and has a moat round it. Not far away are some fine timber houses, where a few rich merchants live. We shall not be able to find any stone or brick houses at all, not even if we seek for them in the towns. They were not built until later.

Away on a distant hill is a great castle. Perhaps we may have seen its ruins in our own days, and know how thick its strong walls are. We may have seen the square keep in the centre, and perhaps the guide told us that it was to this strong tower that the baron and



Specially drawn for this work

If a man's cows got loose in olden days they might destroy a neighbour's plot—for no man was allowed to grow a hedge, or put up a gate. This led to many angry scenes among the villagers, who lived in cottages with no glass windows or chimneys.

his men retreated, if the enemy took the outer parts of the castle.

The baron's flag is flying gaily from the keep. In the fields outside the castle there is much coming and going. More flags are flying, and we see men on horseback riding here and there. Perhaps a tournament is going to be held. Let us go and see.

Lord of the Castle.

Here is a pilgrim trudging along, a staff in his hand, a cloak across his shoulders and a leather bag over his back in which he carries his food and other goods. We will ask him what the excitement is about.

He answers us in English, but we find it hard to understand him, for he does not talk as we do. He uses words that we do not recognise, and his accent is different from ours. Still, we understand enough to know that we have happened on a tournament which the lord of the castle is holding.

Many knights are riding about us. Some carry long spears, and all are in full armour. On their left arms are their shields, which they will soon need, for a thrust from a spear will kill a man outright, if he does not protect himself. The common people are gathered round the tournament field, watching. The ladies from the castle are in a fine pavilion under a gay awning, at the other end of the meadow. Soon the sound of trumpets is heard, and two knights gallop on to the field.

Finding a Monastery.

We should dearly love to watch the tournament, but we must go on our ride once more. Night will soon be drawing near, and we must find a shelter. There are no hotels to stay at—we cannot telephone for a bed, for there is no one in the whole land who would know what a telephone was, if we asked him. Neither can we expect a passing motor-car to pick us up if we get lost anywhere, for such a thing as a car would be impossible to find if we

searched the whole world over. We must ride on our way, hoping to reach a monastery before dusk.

But why a monastery? you will say. We want to find one because we know that there will be a guest-house there, where tired travellers are kindly received, given food and drink and a place in which to rest.

Soon we come to a monastery, a beautiful building in the distance. It is enclosed by walls. We must find the gate-house and ring the bell. A monk answers it, and takes us to the guest-house. As we pass through the building, we catch a glimpse of cloistered courts, where the monks walk and where they teach the merchants' children to read and write. We see the splendid writing-room, where the monks keep their illuminated manuscripts—for there were no books in those days. Printing had not yet been discovered. Every book had to be written by hand.

In the Chapter-House.

We pass by the refectory, where the monks eat their meals, the chapter-house, where meetings are held to discuss important matters, and the dormitory, where the monks sleep at night. The monastery is a large place, but even when we have seen all these things we have not seen it all. There is a hospital attached, where ill monks are tended, the kitchen, the cellar, the lovely garden and orchards; and last, but not least, the fish-ponds, well stocked with many kinds of fish which the monks catch and eat on their fast-day, Friday.

If the monastery is a very big one, it will have its own fields and pastures, its own cattle and sheep. It will be almost a town in itself, with the abbot at its head, ruling over all the members of the community.

We will spend the night here, and then on the next day we will set out again to go to a town, for the places we have seen until now have been scattered villages. As we start out once more,

ON THE VILLAGE GREEN



Specially drawn for this work

In olden days there was hardly a village green in England that did not possess its Maypole. In those times the first of May was always a holiday and folks danced merrily, long ribbons of gay colours being attached to the top of the garlanded pole in such a way that they could be plaited and unplaited by the dancers. Even London owned its maypole, which stood in the Strand, hard by Somerset House. The month is called after the goddess Maia, daughter of Atlas.

ASSEMBLING FOR THE TOURNAMENT



Specially drawn for this week
The lords of the castles in the Middle Ages held tournaments. Common people gathered round the tournament field, watching. The ladies from the castle would be in a fine pavilion under a gay awning and many knights would be riding about. All would be in full armour.

TRAVELLERS IN THE MIDDLE AGES



Specially drawn for this work.
Travellers in days gone by found no hotels at which to pass the night. Instead, as darkness fell, they looked about for the lights of a monastery. Here they would find a guest-house.

some of the other guests who have spent the night at the monastery accompany us for a little way. There are a few pilgrims, and a wandering knight or two in shining armour, seeking adventure or on their way to a tournament. Riding behind the knights are their squires, carrying the long spears belonging to their masters. There are no ordinary people such as we might see crowding into the trains and 'buses every morning now. In those days the common people very rarely travelled. Most people stayed in their own village or town all their life long.

Warding off the Foe.

Over the hills we ride to the nearest town. It has strong walls all round it, and a wide moat outside to keep off enemies. At each corner of the walls are towers for defence, and over the gate is another tower. Before we can get in the drawbridge must be let down for us to pass over.

Why are there all these towers, this drawbridge and strong gate? It is because one of the barons, or a foreign

foe, might come riding by with a troop of followers and try to take the town. If that happens, up goes the drawbridge, the gates are all shut, the towers are well-manned, and the enemy is repulsed.

The Market Square.

Now we are inside the town. Here there are more timbered houses with many gables. They belong to rich merchants, and behind them, if we peeped, we should see pleasant gardens and rows of fruit-trees. We may still see some of these beautiful old houses in our countryside.

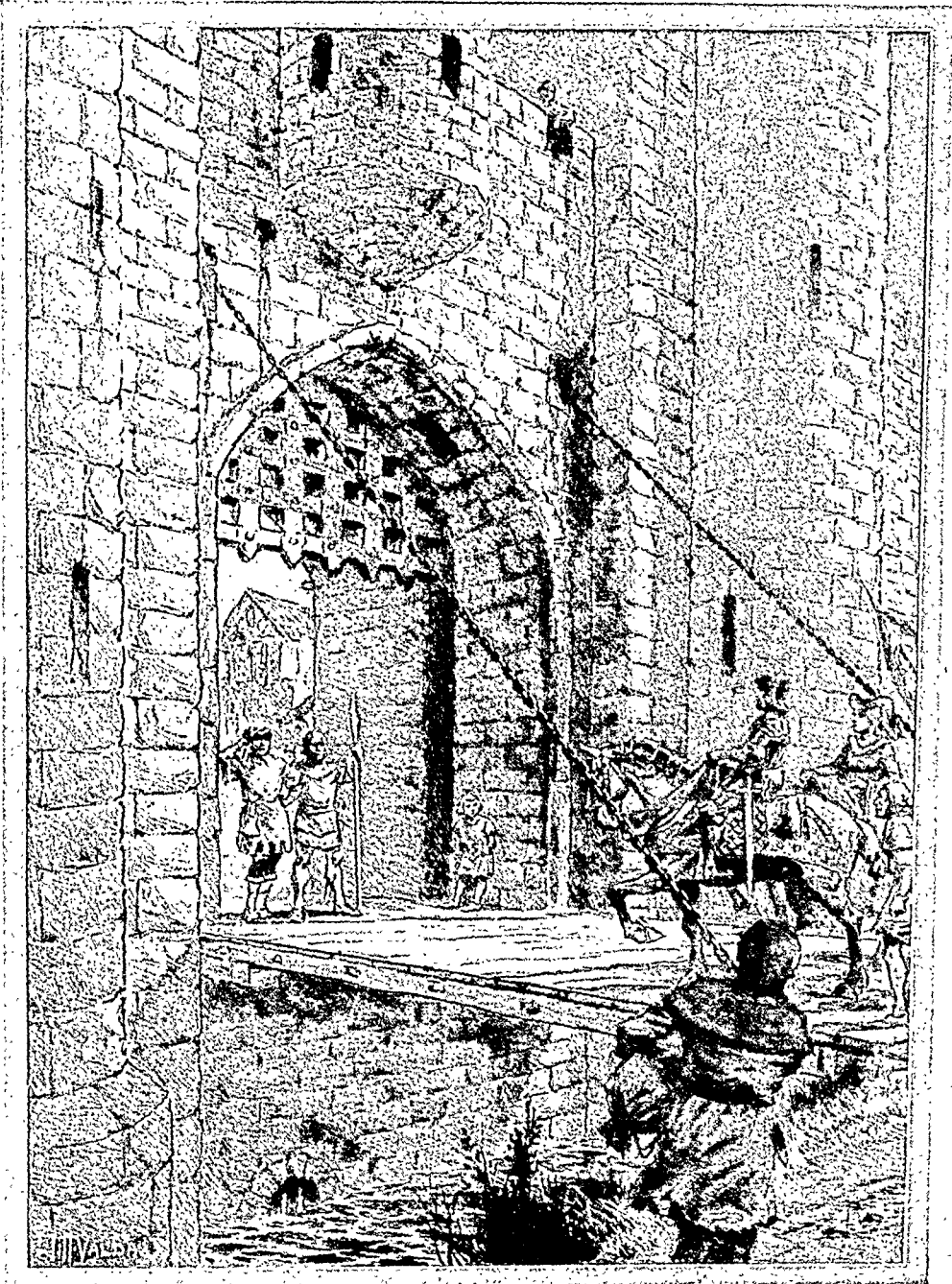
We notice a fine building, which a passer-by tells us is the guildhall. Here the members of the guilds or trading companies meet to discuss their affairs. They are very jealous of their trades. They will not let any stranger begin to trade in their town, nor will they let anyone start business there unless he has served a proper apprenticeship and knows his work thoroughly.

In the middle of the town is the market-square. If the town is a large one, it may hold a "fair" in the



Specially drawn for this work.
Monasteries possessed splendid writing rooms, where the monks kept their illuminated manuscripts—for there were no printed books in the Middle Ages. The monks also taught the merchants' children to read and write.

CROSSING THE DRAWBRIDGE



Specially drawn for this work.

Every town had strong walls all round it and a wide moat outside to keep off enemies. Before travellers could get inside the town the drawbridge had to be let down for them to pass over. At each corner of the walls were towers for defence.

market-square, and then many other traders and merchants from distant towns bring their wares to sell. Before these strangers enter the town, they must pay a toll at the toll-gate. Perhaps there is an old toll-house you know in your own town. It will remind you of these long-ago days, when next you see it.

Fair-days were a source of great excitement in the Middle Ages. If we attended one, we should see knights and fair ladies, market women, pilgrims, monks, peasants in smock frocks, minstrels eager to sing us songs, hawkers begging us to buy their goods, merchants with their stalls of fine wares, jugglers and dancers. We should have a great time; and, like the children of those days, we should not want to go home to bed that night.

Round the Town.

If we look round the town, we shall not like it very much. The streets are very dirty, for every one throws his rubbish there, and dogs and crows are always rooting about in it. The town smells badly; and we, who are used to well-swept roads, long for the dustman to come along and collect the rubbish. But there are no dustmen in this town at all, nor in any other. There are no

policemen either, so we will not stay out after dark.

Now let us leave the world of the Middle Ages, and ride back to the England of to-day. What a clean world it seems! But how crowded! How noisy the streets are, and how full of traffic! Still, it is our own world in our own generation, and, though there are a few things we prefer the Middle Ages for, we know that life is a better and happier thing in the twentieth century.

If we happened to be thirsty we could not go into a place and order a cup of tea or coffee, for these beverages then were as unknown as the telephone or railway train. Apart from milk and water, home-brewed ale was the chief drink at every meal for the poor people, whilst those who were better off partook of wine. Food, too, was totally different, as were the methods of eating. There were no potatoes then to go with one's meat and no forks with which to lift pieces to one's lips. We should have found that fingers took the place of forks and that bones were thrown under the table for the dogs who waited there for these tit-bits.

And just think how different the clothes would have been! We have but to look at the illustrations to our tour through the Middle Ages to see the garb which folks in those days wore.



In the middle of the town is the market-square. If the town is a large one it may hold a "fair" in the square, and then many other traders and merchants from distant towns bring their wares to sell. Before these strangers enter the town they must pay a toll at the toll-gate. *Specially drawn for this work*

SERFS OR FREE MEN?



Specially drawn for this work.

The Great Plague entered England by way of Dorsetshire, broke out at Bristol, then at Gloucester, and two months later had reached London. From there it spread to every part of the country. People died in hundreds and were buried in open pits.

FROM one end of England to the other there was nothing but feasting, drinking, fairs, beacon fires and tournaments that lasted for many days. For this was the year of grace 1347, and Edward the Third, the greatest warrior in Europe, was home again after ten years of victory on land and sea. Off Sluys, in a battle in which the enemy's vessels were so many that "their masts appeared to be like a great wood," he had defeated the French and driven their ships off the seas. At Crécy his army had utterly routed the much more numerous forces of the French. In the next year the King of Scotland had been beaten and taken prisoner by an English army. And in the year after that Calais, the "Key of France," had surrendered after a long siege. Small wonder, therefore, that Englishmen made merry and thought highly of themselves.

The Plague Breaks Out.

The Plague Breaks Out.

But while the story of these great victories yet thrilled them, the whole land was plunged into fear and grief, for it was smitten by that terrible plague known as the Black Death. Starting in the Far East, this deadly disease spread to the Black Sea, and from there it travelled swiftly across Europe.

It entered England by way of Dorsetshire, broke out at Bristol, then at Gloucester, and two months later had reached London. From there it spread slowly, but mercilessly, to every part of the country. No man, woman or child was safe from its silent approach, and in the grim months that followed nearly half of the four millions who then made up the nation died. In many villages scarcely a soul was left alive, and the land ceased to be cultivated; in the crowded towns, where the streets were narrow, dirty and undrained, people died in hundreds, and their bodies were thrown into open pits; "the sheep and cattle strayed through the fields of corn, and there was none left to drive them out."

The Black Death actually lasted for fourteen months, but some of its effects lingered much longer. For many years there had been a gradual change in the system by which land was held and cultivated. In bygone centuries the estates of the great landowners had been divided up in such a way that while one part was kept for themselves, another part was let out in small portions to free peasants, and the rest split up among half-enslaved labourers known as "villeins." Both the freemen

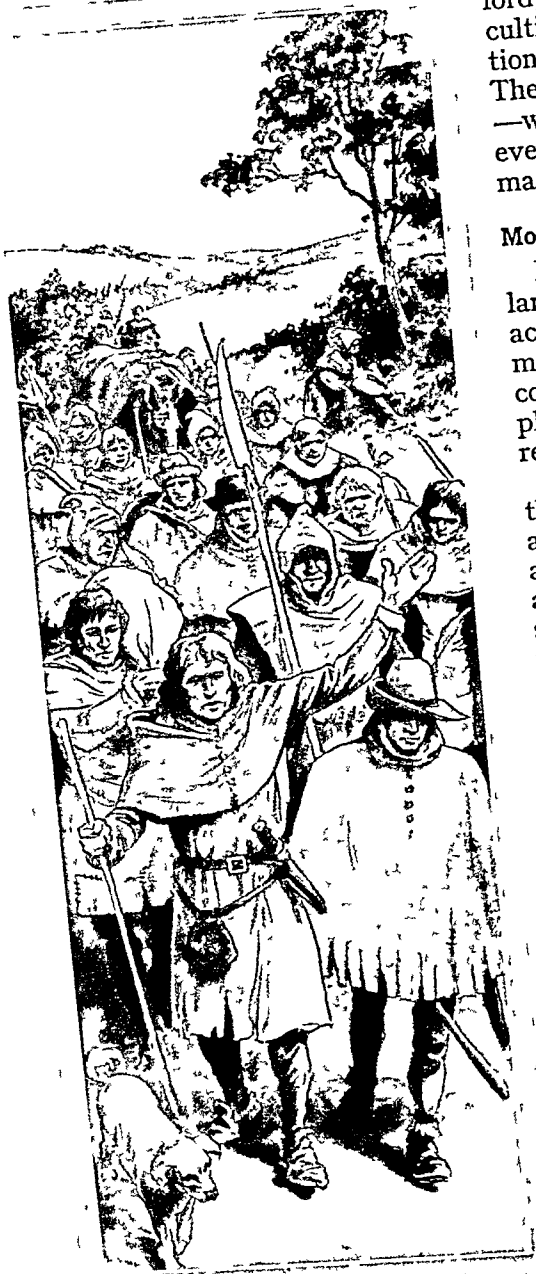
and the villeins owed service to their lord, and were compelled to help in the cultivation of his lands, but, in addition, the villeins belonged to the estate. They might not go and work elsewhere—without special permission, at all events—and they were as much their master's property as were his cattle.

Money for Service.

In recent times, however, the great landowners had found it convenient to accept money instead of service, and more and more the peasants were becoming free men, holding their small plots in return for what we should call rent.

But after the Black Death everything was altered. Corn was scarce, and so cost more. Labour was scarce, and the free peasants, who were able to ask as much as they liked for their service, demanded double the wages they had had before. This irritated the landowners, who had to have labour at any price. It also roused the jealousy of those who were still villeins, because they were not able to demand higher wages, as the free workers could.

So much trouble arose that Parliament made a rather stupid law called "The Statute of Labourers," by which peasants who were already in service were forbidden to go elsewhere, while those not in service had to work for any master who required them to do so. Moreover, the wages paid to them were to be the same as those paid before the Black Death, and anybody who gave Runaway labourers, if caught, were to be branded on the forehead, and anyone who sheltered them was to be heavily punished. All this meant that the free labourers were no longer free, and the villeins were worse off than ever. For many years there was a deep and increasing dissatisfaction about the whole matter, and in the next reign, that of Richard the Second, serious trouble broke out.



Specially drawn for this work.

A "poll-tax" was levied, under which every person had to pay the same amount, whether rich or poor. A blaze of rebellion broke out. In Essex the people rose under a leader who took the name Jack Straw, and marched to Mile End, on the east of London.



THE KILLING OF WAT TYLER.

In the reign of King Richard II. the above incident took place, when Sir William Walworth, Lord Mayor of London, slew Wat Tyler. Wat Tyler had led a party of peasants to the capital, where the rebels did much damage to property, many people losing their lives. The original painting, from which this engraving was made, was by James Northcote, R.A.

There were other causes of this trouble. Taxes were high, and many people thought that much of the money was wasted. Many men who had been soldiers during the French war were now roaming the country, idle, mischievous, and full of dangerous talk; a great part of the nation was poor, and angered by the scarcity of food; and a priest named John Ball, and others like him, had stirred up the peasants by calling their attention to the differences between their lives and those of more fortunate people who had land, or money, or rank.

What Jack Straw Did.

Then Richard and those who helped him to govern did a very foolish thing. They levied a "poll-tax" (*i.e.*, a tax on each "poll," or head) on everybody in the country to pay for the French war

The amount paid by any person varied according to his wealth, but in the next year another poll-tax was levied, and this time everybody, rich or poor, was to pay the same amount. It was this that fanned the long-smouldering discontent into the blaze of rebellion. In Essex the people rose under a leader who took the name Jack Straw, and marched to Mile End, on the east of London.

In Hertfordshire the peasants attacked the famous monastery of St. Albans, and then marched to High-bury, on the north of the capital. At Dartford a tax collector insulted the daughter of a man named Tyler, who killed him. The people rose, freed John Ball, who had been put in prison, and marched to Southwark, burning houses as they went. In almost every county men left their work in the fields,

armed themselves with ancient weapons or farm tools, and marched to London. Some of the people inside the city opened the gates and the rebels entered. They roamed through the streets, doing much damage to property.

How Wat Tyler Died.

The King dealt boldly with them. First he promised the Essex men that serfs should be freed, and they believed him and set out for home. Then he went to meet Wat Tyler and his followers. Again Richard promised what was asked, but at the end of the talk a quarrel broke out between the Lord Mayor of London and the leader of the peasants. Wat Tyler was slain, but just as his men were about to avenge him Richard rode forward.

"What, good fellows," he shouted, "would you slay your king? Do not

grieve for that traitor! I will be your leader! Follow me, and you shall have all that you ask!"

So, by promising the freedom that the peasants wanted, he persuaded them to go quietly back. But the promises were never kept. Richard had no intention of standing by them, and Parliament declared that he had no right to make them. A great number of the rebels were hanged as a punishment when the revolt was over, and it looked as if the attempt to win freedom had failed.

Nevertheless, this was not the case. Neither the rulers nor the landlords wished for more trouble, and it was found better for everybody gradually to adopt the plan of accepting money rents from the peasants instead of service. Before many years had passed there were no longer villeins in England.



Art. Agit

YORK AND LANCASTER

This picture, after the original painting by John Pettie, R.A., the Scots painter (1839-93), shows the historic incident when the white rose was adopted as the emblem and badge of the Yorkists. The Lancastrians chose a red rose and the contest between the opposing houses for the crown of England became known as the Wars of the Roses.

The Romance of History



Tales of England's Greatness



W. F. Mansell.

READING THE BIBLE IN TUDOR TIMES.

In this fine picture the artist Robertson gives us a splendid idea of a scene such as might have been witnessed in any English village in the days of the Tudors. Holy men travelled afoot from place to place, gathered eager congregations round them and then read chapters from the Bible. Even to-day we may still find the so-called "Preaching Crosses" in many a village.

"THE OLD ORDER CHANGETH"

IN the Almonry of Westminster Abbey, so-called because it was there that alms were given to the poor, two men leant over a table examining eagerly a sheet of paper. For a long while they gazed at it, and then the one who was clearly the master turned to his assistant and smiled. In his smile there was something of triumph, which is hardly to be wondered at, for the paper on the table was the first leaf of the first book ever printed in England.

Our First Printed Book.

There were many in London who would have tried to burn both men and machine had they known what was happening, for to a vast number of people the newly-discovered art of

printing was nothing less than magic of the worst sort.

On the Continent more was known of the matter, for twenty years earlier John Gutenberg had succeeded in printing the Bible in Latin, in two great bound volumes. The city of Mainz, where he had carried out this marvellous work, had been sacked soon afterwards, and his workmen had scattered to other parts of Europe.

Caxton—son of a Kentish farmer, a wool merchant by trade, and now living at Bruges, in Belgium—had been greatly interested in this new art. From his youth he had loved books and study.

He had also translated from the French "The Histories of Troy";



Kischg 14.

CAXTON SHOWING PROOFS TO EDWARD IV.

It is difficult to realise what the world would be like if there were no printed books. Caxton, son of a Kentish farmer, was the first man to establish printing in England. He set up his press in the Almonry of Westminster Abbey (the place where poor people went to receive alms), and is here seen proudly exhibiting a proof, just taken from the press, to King Edward IV. The illustration is reproduced from a painting by D. MacIuse, R.A.

and, since many of his friends wanted copies, and (as he tells us himself) his eye was "dimmed with overmuch looking on white paper," he had gone to Cologne to study printing. He had then returned to Bruges and set up a printing machine of his own. Two years later he had crossed to England, bringing some of the wonderful new metal letters and his printing press with him.

The times were ripe for the making of books, for everywhere there was such a desire for knowledge as had never existed before. In the old days none but the clergy had had much learning, but for various reasons all that was now altered. One of the main causes of the change was the taking of Constantinople by the Turks. That city had long been the capital of the Eastern Empire, and there had dwelt the great scholars who

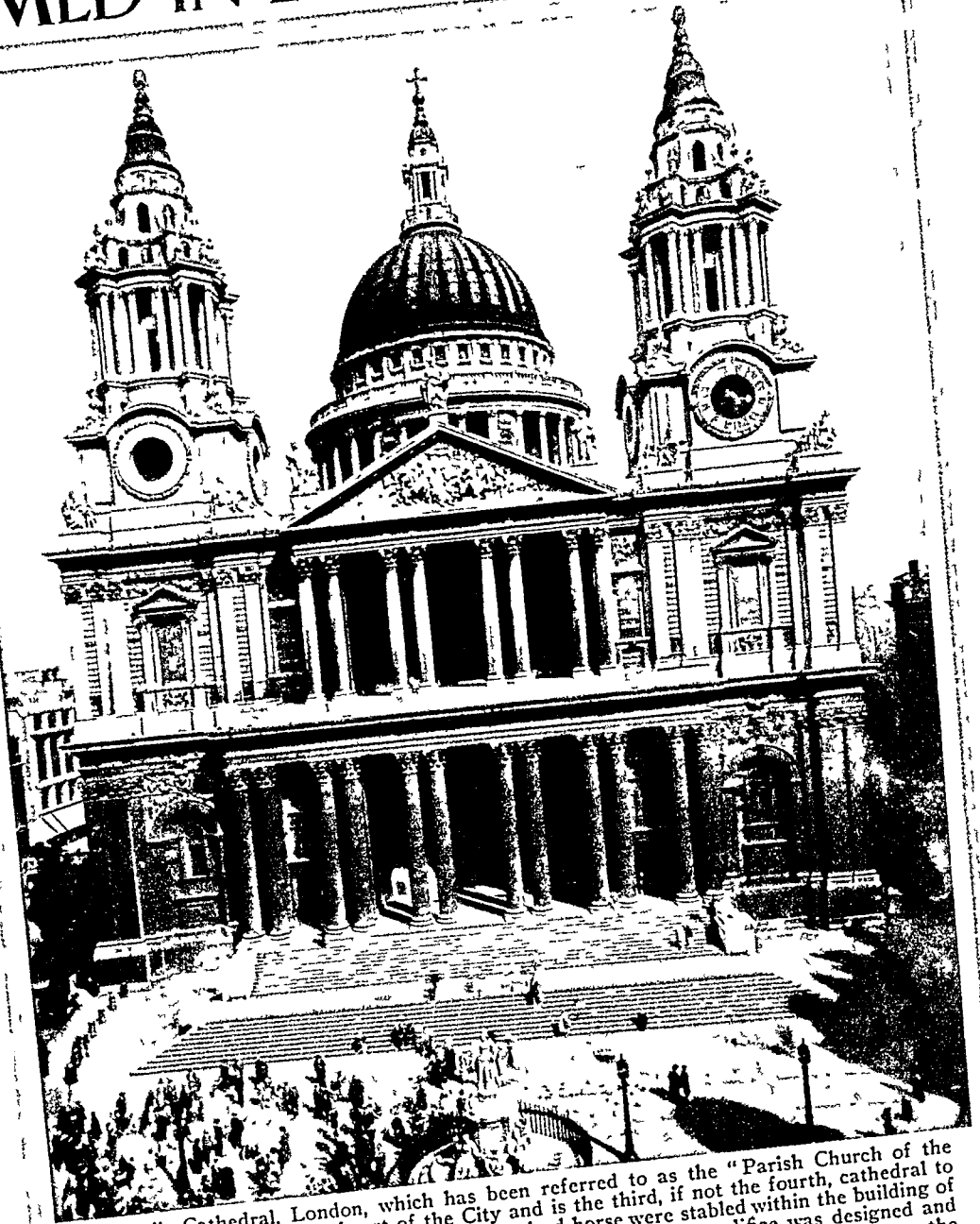
understood the writings of the Greeks and Romans, and other branches of art and learning. When the city was captured, these men fled to other countries.

Beyond the Horizons.

In many other ways, and for many other reasons, life was rapidly altering. Not only were men's minds stretching out beyond what had hitherto been the limits of knowledge, but geographical boundaries were being extended.

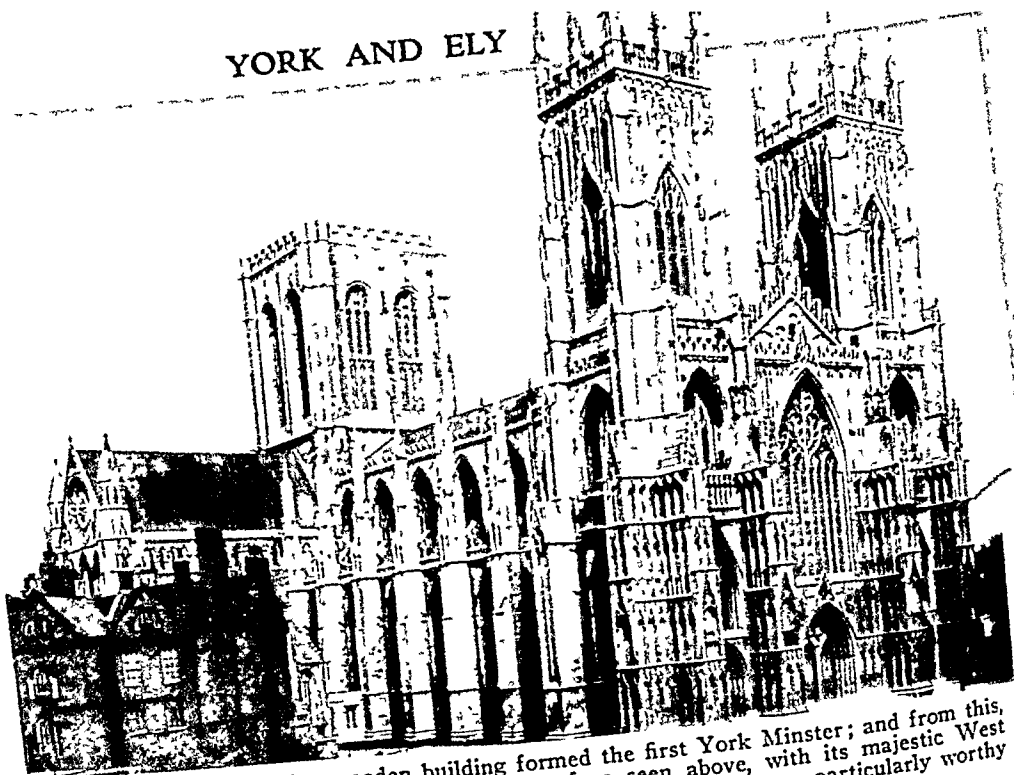
So it is that because of all the changes that were taking place, in this country and in others, at the time when Henry the Seventh reigned in England, the latter part of the fifteenth century and the early part of the sixteenth are looked upon as the End of the Middle Ages and the Beginning of Modern Times.

FAMED IN ENGLAND'S STORY



St Paul's Cathedral, London, which has been referred to as the "Parish Church of the Empire" It stands in the heart of the City and is the third, if not the fourth, cathedral to occupy the site In Cromwell's days eight hundred horse were stabled within the building of that time, which was destroyed in the Great Fire The present edifice was designed and built by Sir Christopher Wren, his great work ending in 1710 The top of the Cross on the dome is 365 feet above the pavement

YORK AND ELY



In the year 627 A.D. a tiny wooden building formed the first York Minster; and from this, through the ages, has grown the magnificent fane seen above, with its majestic West Front on the right. Within the hallowed structure, the Windows are particularly worthy of notice, some of them filled with glass made in the 13th century.



Ely Cathedral stands boldly in the Isle of Ely, where Hereward the Wake and his outlaws baffled William the Conqueror. The beautiful building was commenced by Simeon, Abbot of Ely, in 1083, three years before Domesday Book, and the main fabric was completed in the reign of Edward III. The magnificent West Tower (215 ft.) can be seen standing like a sentinel from many parts of the Fenlands.

THE CASTLE OF PROUD BARONS

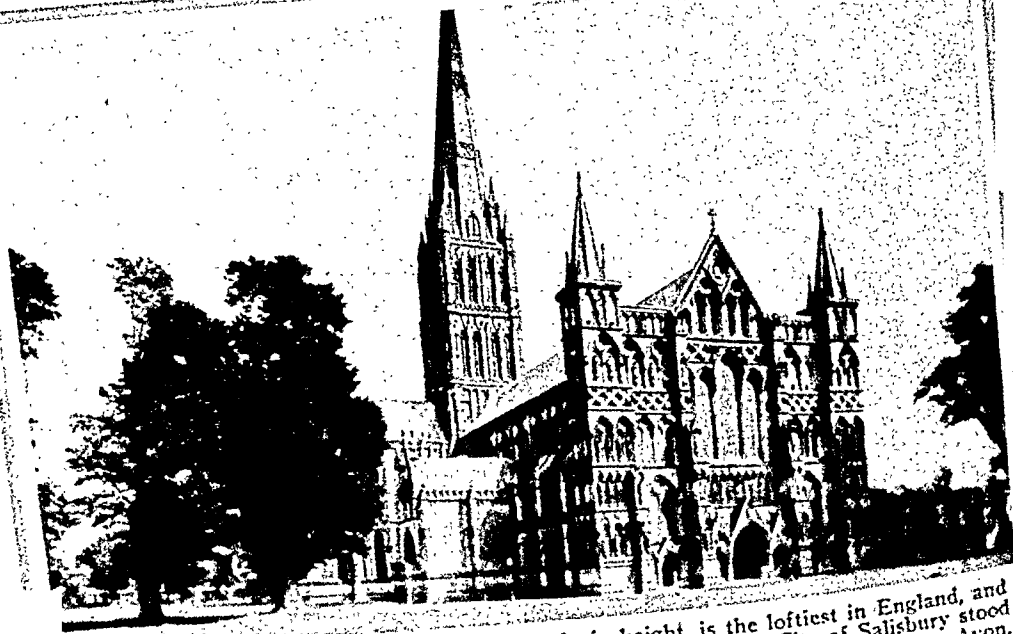


Bodiam Castle in Sussex, within easy reach of Robertsbridge and Battle, is one of the finest examples we have left in England of a moated fortress. It was begun in 1386 and consisted of an oblong or rectangle with a round tower at each corner and a square tower in the middle of each wall. The main entrance was by the Great Gate in the central tower of the northern wall and the moat is 8 ft. deep, 180 yards in one direction and 118 yards in the other. Inside came the Court of the Castle, now a well-kept lawn.

ENGLAND'S TALLEST SPIRE



The City of Wells, in Somerset, is almost encircled by the towering Mendip Hills and the Cathedral Church of St. Andrew dates back to the 10th century, though the present structure was in the main erected in the 12th and 13th centuries. On the West Front are no fewer than 300 sculptured figures. The Bishop's Palace is surrounded by a moat.



The graceful spire of Salisbury Cathedral, 404 ft. in height, is the loftiest in England, and the foundations of this noble pile were laid in 1220. Formerly the City of Salisbury stood on the site of Old Sarum, a few miles away, but was re-built near the River Avon.

IMMORTALISED BY SCOTT



Kenilworth Castle, within a few miles of the City of Warwick, was once occupied by Simon de Montfort and figured largely in the Wars of the Barons. Later, Robert Dudley, Earl of Leicester, entertained Queen Elizabeth within its walls. The Castle was rudely dismantled after the Civil War.



Tantallon Castle stands within a few miles of North Berwick and was the fortress stronghold of the Douglasses, scene of many tragic tales in Scottish history. It is just south of the Bass Rock in the Firth of Forth. An account of Tantallon is given in Sir Walter Scott's poem "Marmion."



Haddon Hall, a seat of the Duke of Rutland, is regarded as being one of the most romantic of the ancestral homes of England. It is in Derbyshire, just off the road between Bakewell and Rowsley. Part of it was built 300 years ago and part is Norman, a piece of the older structure being illustrated above. Scott in "Martindale Hall" in his "Peveril of the Peak" had Haddon Hall in mind, for the Peverils once owned this stronghold.

KING CHARLES AND THE OAK TREE

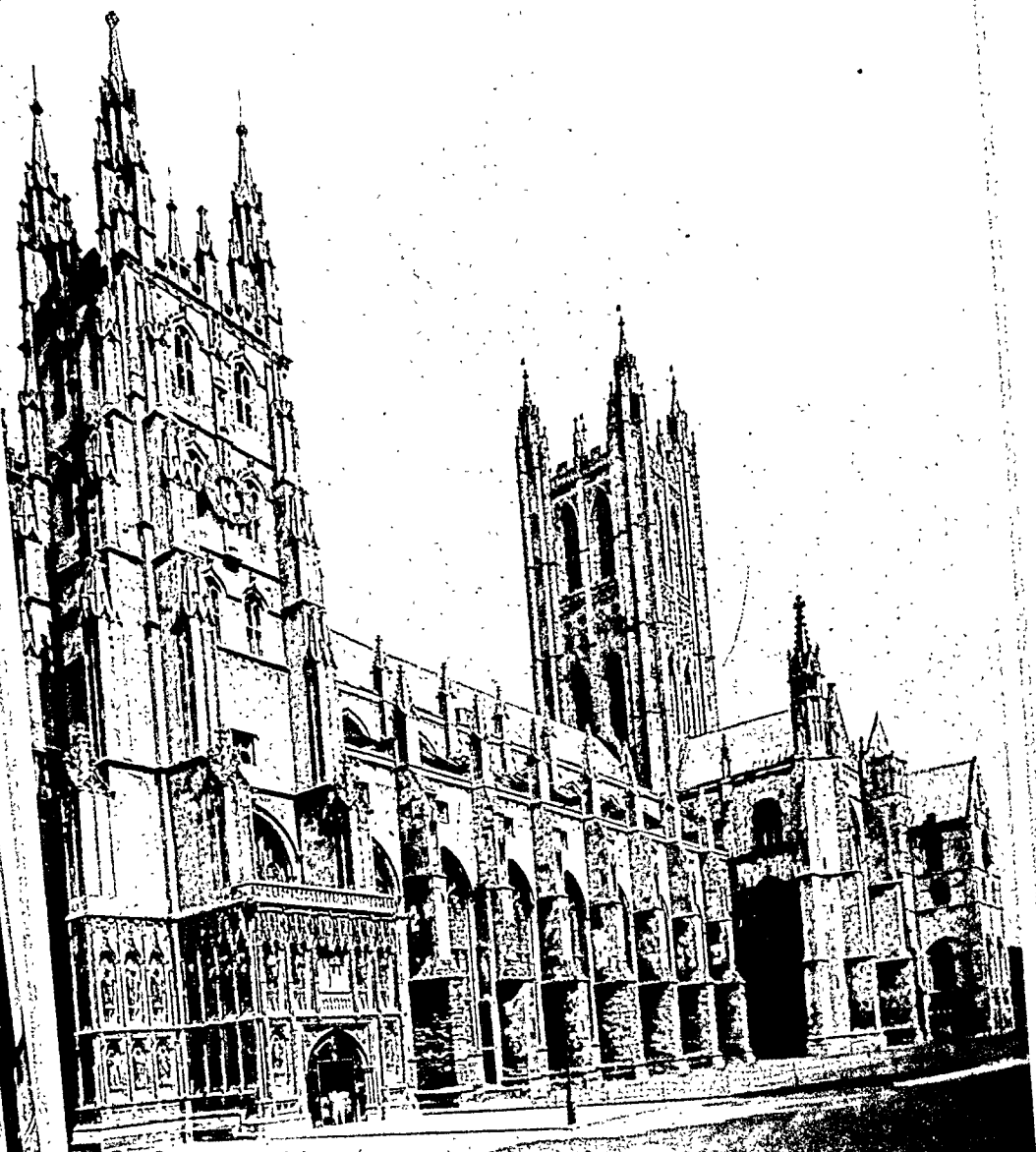


Boscombe Manor House, illustrated above, is in Shropshire, within a few miles of Shifnal. After the Battle of Worcester King Charles II concealed himself here. The Royal Oak, in which the Monarch hid whilst the house was being searched by his pursuers, stood in a field adjoining. The tree is dead but the fine old house still stands.



The Gateway to Hever Castle, with a meet of the foxhounds in progress. Hever is situated near Edenbridge, in Kent, and was first erected in the reign of Edward III. It is famous as having been the residence of Anne Boleyn, the second wife of Henry VIII. The Castle is now a seat of Viscount Astor.

THE CATHEDRAL CHURCH OF CHRIST



Canterbury Cathedral, of which a picture appears above, has a story which began in the year 597, though the present building was not completed until shortly before the year 1500. Within the sacred pile Thomas à Becket was murdered and here one may see the Tomb of the Black Prince, with some relics of this "Bell Harry" Tower (on the right) is 253 ft. and height of the

OUR "TREASURE HOUSE OF MEMORIES"



Westminister Abbey, which stands near the present Houses of Parliament, is sometimes called our national "Treasure House of Memories." It is named West-minster because it was built on the west side of London and there was a church here in Saxon times. Edward the Confessor was really the founder of the Abbey and all our kings and queens (except Edward V, who was never crowned) have held their coronations within the building, which has also been used for royal weddings and funerals. Here the Unknown Warrior was buried amidst the remains of countless illustrious people.

THE DAYS OF GREAT ELIZABETH



Specially drawn for this work

The quiet which surrounded this pleasant place was broken. A man—richly dressed, but stained by hard riding—flung himself upon his knees in loyal devotion. Swiftly he told his message, and as she listened the face of the woman grew more grave.

IN the garden of a fine old English country house a woman sat reading. She was young—twenty-five, to be precise. Clearly she was intelligent and well-educated also, for the book which absorbed her attention was a volume of Greek poetry, while of the others which lay beside her on the grass, one was written in Latin, and another in Italian.

Suddenly the quiet which surrounded this pleasant place was broken. From a short distance away came the sound of a voice, urgent and somewhat excited. Rapid steps followed; and, in a moment or two, a man—richly dressed, but stained by hard riding—had flung himself upon his knees in loyal devotion. Swiftly he told his message, and as she listened the face of the woman grew more grave. When the tale was finished she quietly closed the book she had been reading and rose to her feet.

"This is the Lord's doing," she said reverently, "and it is marvellous in our eyes!"

Queen of England.

So there was brought to Elizabeth Tudor, whose life had for the most part been spent in this peaceful country seat, the news that her sister was dead, and that she was Queen of England.

Like her father and her grandfather, she had great courage and a strong will. In spite of her youth she was shrewd in matters of government and as clear-sighted as any of the experienced statesmen around her. She was strong enough to trust herself, and wise enough to choose good counsellors.

It was just such a sovereign that England needed at that time. The nation was sore and disheartened by defeat in war, and the loss of Calais, which it had held for 200 years. Religious unrest and persecution had disturbed the hearts and minds of the people.

Spain, France and Scotland were hostile, as was also the Pope, who denied that she was the rightful queen of England, and called upon the sovereigns of the Catholic countries to remove her from the throne. She had a powerful rival in Mary Queen of Scots, who was to cause great trouble in the years to come. Her treasury was empty, her army small, and her navy wasted away. The task of government in such circumstances might well have daunted the strongest and most experienced man, but it did not daunt Elizabeth. Knowing all these things, she, nevertheless, set to work to make her subjects happy and prosperous, to raise England to a

high place among the nations of Europe, and to lay the foundations of a great empire.

For Thirty Years.

The enmity of the Pope and of the two great supporters of the Roman Catholic Church—Spain and France—forced her into the position of being the chief upholder of the Reformation, both in England and abroad. For thirty years she had to face the danger of plots at home and invasion by other nations, and more and more the struggle narrowed down to a contest between Spain and England.

The conflict between these two

countries was made worse by the commercial rivalry that gradually sprang up between them. The stories that were told of the Spanish colonies in America, and of the wonderful treasures that were to be had there, fired the imagination and roused the ambition of the gallant English sailors of that time. At first they went out to see these new lands, to try to trade with them, and to discover others like them. But quite often these expeditions ended in bloodshed and the sinking or burning of ships, and that led in turn to more fighting and bitter hatred.

Elizabeth, who understood thoroughly



W. F. Mansell

THE BOYHOOD OF RALEIGH

This picture, by Sir John Everett Millais, R.A. (1829-96), who came of a Jersey family, illustrates the upbringing of Sir Walter Raleigh, who was born at Hayes Barton, near Budleigh Salterton, and proved himself a true son of Devon. He became a prime favourite of Queen Elizabeth, and once laid his cloak in the mud before her so that she could pass dry-footed. Raleigh must have absorbed his love of sea adventure from many an old sailor, to whose narratives he listened in wonderment, as is depicted above. The original painting is in the Tate Gallery.



Kirschgitz.

QUEEN ELIZABETH SIGNS THE DEATH WARRANT

Queen Elizabeth had a powerful rival in Mary Queen of Scots, and kept her prisoner for eighteen years. Eventually Mary was brought to trial, charged with plotting. She was condemned, and Parliament demanded that she should be executed, though Elizabeth endeavoured to set aside the decision. Unsuccessful in her efforts, Queen Elizabeth was called upon to sign and seal the death warrant, as is shown above in J. Schrader's famous picture, which now hangs in the Metropolitan Museum of Art, New York. The moment must have been one of the most terrible in Elizabeth's life, and sentence was carried out before she had time to change her mind.

how to steer a tactful course among difficulties, pretended that she had no sympathy with the English sea-dogs,

but secretly she encouraged them, partly because she shared the profits of their raids, and partly because their



Rischgitz

“ THE ARMADA IS IN SIGHT ! ”

In this realistic masterpiece Seymour Lucas, R A , depicted the scene on a sunny afternoon in July, 1588 when an officer brought the news of the approach of the Spanish Armada. At the time Sir Francis Drake, the first Englishman to sail in one voyage round the world, was playing on the bowling green of the Hoe at Plymouth with a group of captains. Hearing that the enemy was in sight, Drake laughingly declared that there was plenty of time to win the game and beat the Spaniards too !

activities damaged the sea-power of Spain and delayed the invasion which she knew must come

Sir Francis Drake.

Of all the great adventurers who wrought such havoc on “ the Spanish Main,” none is so famous as Sir Francis Drake. Having taken part in an unsuccessful and wholly unlawful expedition to the Spanish colonies, he swore to be revenged for the damage that was suffered, and he kept this oath very thoroughly. On two occasions soon after, he led little fleets of ships across the Atlantic; and there, by attacking and plundering Spanish vessels and cities, won for himself the name of “ The Dragon ” The account of these exploits, which can be read by anyone, is fascinating beyond all words. In the second of his voyages Drake, with one small ship and eighty men, did the

most marvellous deeds and carried terror into the hearts of all his hated foes. It was then, too, that he sailed round the world for the first of the three times that he accomplished this feat.

Elizabeth, who had promised Philip of Spain that she would hang Drake for a pirate when he returned, knighted him instead. Soon afterwards, knowing that Philip was preparing a great navy with which to invade England, she sent Drake to do what he could against it, and the fearless little sea-dog “singed the King of Spain’s beard ” by leading his fleet of twenty-four ships right into Cadiz harbour and destroying more than a hundred Spanish vessels, as well as a vast quantity of stores. In this way he delayed the invasion for a whole year and gave his countrymen more time to prepare for it.

Protestant and Catholic.

Nor did they waste the opportunity. Protestant and Catholic laid aside their quarrel, and worked valiantly for the defence of their land. Men of all ages and classes enrolled as soldiers and drilled regularly every week. Money poured in from every side to purchase the necessities for war, and in every shipyard there were ships building for the great struggle, not to be held off any longer. Elizabeth roused the enthusiasm of her subjects to fever-heat by putting on armour and riding to Tilbury on a great war-horse to review the troops.

"I am come among you," she said, "not for my recreation, but being resolved to live and die among you all, to lay down—for my God and for my kingdom and for my people—my honour and my blood, even in the dust. I know I have but the body of a weak and feeble woman, but I have the heart of a King—and of a King of England, too!"

There is no room to tell here the story of the great encounter by which this island was saved. Proudly they set out, those floating castles which made up the Invincible Armada. One hundred and thirty there were, with 30,000 sailors and soldiers, and nearly 3,000 cannon. Fifty-three of them, spent and broken, crept home nearly five months afterwards. All the rest, together with 20,000 men, had perished through the courage and better seamanship of the English, or in the gales that followed them all through that weary, panic-stricken flight. "The Lord sent his wind and scattered them," was the inscription on a medal struck to celebrate the victory, and so indeed it was.

In the Golden Age.

The fear of that long-threatened invasion having passed away, England entered upon a kind of Golden Age. At last she was able to enjoy peace, and all the blessings which peace brings.



DRAKE ON BOARD THE REVENGE

Here is another Sir Francis Drake picture by Seymour Lucas, R. A. The *Revenge* was the flagship of Sir Francis, and upon her deck the Spaniards yielded to him at the time of the Armada. Drake was born near Tavistock, in Devon. He died at sea from illness, and his body, as seems most fitting, was committed to the deep in the Atlantic Ocean.

Industry and commerce flourished. The wealth of the country increased, and brought about an increase also of comfort and enjoyment. Better homes, better clothes, better food, all helped to make the nation happier and healthier.

England's Greatest Writer.

One of the most remarkable features of even this remarkable period is the sudden outburst of poetry, song and drama.

For about two centuries there had been almost nothing worth mentioning or remembering in English literature, but the stirring events of the reign, the quiet and happy years with which it closed, and a chivalrous regard for Elizabeth herself, all combined to inspire some of the greatest writers that have ever lived. Foremost among them stand such men as William Shakespeare and Edmund Spenser. The latter, in the introduction to his famous poem, "The Faerie Queene," summed up quite well the nature and

results of the forty-five years during which the "Virgin Queen" sat upon the throne:—

To
The most high, mightie, and
magnificent
Empresse,
Renowned for pietie, vertue,
and all gracious government,
ELIZABETH,
by the grace of God,
Queene of England, Fraunce, and
Ireland,
and of Virginia,
Defendour of the Faith, etc.,
Her most humble servaunt
EDMUND SPENSER,
doth, in all humilitie,
dedicate, present, and consecrate
these his labours,
To live with the eternitie of her
fame.

It seemed fitting, too, that Queen Elizabeth should herself extend gracious patronage to her writers, as is shown by the fact that Shakespeare was commanded to give readings at her court.



SHAKESPEARE READING BEFORE QUEEN ELIZABETH

In the days of Queen Elizabeth one of the most remarkable features was the sudden outburst of poetry, song and drama. Foremost among the great Elizabethan writers stand such men as William Shakespeare and Edmund Spenser. As is illustrated above, Shakespeare was called upon to give readings before the Queen. This reproduction is after the painting by Ender.

Rischgitz

THE STORY OF A GREAT CHANGE



THE DAWN OF THE REFORMATION

In this painting, by W. F. Yeames, R.A., we see John Wyclif sending his preachers forth into the world to plead for an improvement in the conduct of the Church and the revival of the simple teaching of the Founder of the Christian religion.

IN an open space in a little German town a crowd of men and women watched with silent interest the grave-faced scholar who stood in their midst. Before him a fire of logs burnt upon the stones, and in his hand he held a long parchment. The man was Martin Luther, the monk who risked everything he had in the world, including his life, for the cause to which he had pledged himself. The document he held was the Pope's sentence of "excommunication," the penalty for his lectures and his writings. In solemn stillness he flung the Pope's letter into the flames, and watched it burn. Then, turning to the crowd, he began quietly to urge upon them the need for improvement within the Church.

Against the Church.

Throughout Europe there were many who felt as he did. Long before, in our own land, John Wyclif had written and preached against the way in which great Church officials got land and riches. He (and others who followed him) had protested against the careless, and even bad, lives of many of the clergy. Gradually there had grown up

almost everywhere a desire to make the Church improve itself; or, failing this, to cut loose from it.

The feeling against the Church was shared by kings and nobles, who hated the way in which the Popes and their representatives interfered in government; by the mass of ordinary people, whose lands and money were taken, and who had lost their respect for the clergy, and by scholars, who saw that the teachings of the Church were no longer based on the simple teaching of the Founder of the Christian religion.

All these people wanted Church reform, but they did not all want the same thing. Some of them thought it would be enough to make the clergy live better lives, and to compel the Church to carry out its duty more sincerely; some wanted to alter the teachings of the Church, and to get back to the plain guidance set down in the New Testament; some wanted to go much further, and to get away from the authority of the Pope altogether.

The Reformation.

The great movement that resulted is called "The Reformation," and, so far

as England is concerned, it was carried out in a very curious way in the reign of Henry the Eighth. The king did not share the desire for reform; in fact, he wrote an answer to a criticism which Luther had written about the Church, and as a reward was given the title "Defender of the Faith" by the Pope.

A Decision at Rome.

A few years later, when he grew tired of his first wife—who had formerly been his brother's wife—and wanted to marry someone else, he appealed to the Pope to say that his marriage had never been a proper one. For various reasons the Pope was not willing to say this, and he tried to gain time by appointing two of his chief representatives to hear the case tried. The inquiry dragged on for several months, during which the king grew very impatient, and at last the Pope said he would decide about the matter himself at Rome.

But Henry would not bear this. Under his instructions Parliament began to pass laws which defied the Pope, lessened his power, and made the English clergy accept the king as their head. Meanwhile Henry married again, and got a court of bishops, under an Archbishop of Canterbury chosen for the purpose, to say that that first marriage was illegal, and the second one quite legal. Then, having gone so far that it was impossible to go back, he made Parliament declare that he was "Supreme Head of the Church of England"; and, as a last stroke against the Pope, he shut up many of the monasteries, of which there was a great number, and took possession of their lands and wealth.

Governed by Council.

But, although Henry the Eighth destroyed the authority of the Pope so far as England was concerned, he did not alter the beliefs and teaching of the Church; in fact, he strongly opposed anyone who tried to do so. He hoped

that the Reformation movement would end at the point to which he had taken it, but this was impossible. In the next reign—that of Edward the Sixth, who became king when he was a boy of ten—the government of the country was at first in the hands of a council, the chief member of which, the Duke of Somerset, was a strong Protestant.

A book of sermons on the reformed religion was made and read in churches, and soon afterwards, by order of Parliament, a Prayer Book was compiled and put into use throughout the kingdom. A second Prayer Book, still more Protestant, followed, and then came a list of Forty-two Articles, in which the beliefs of the Church of England were set out. So, in the space of six years, the religious teaching of the Church underwent a complete change.

Burned to Death.

But the country was not really ready for such sweeping measures, and when Queen Mary ascended the throne and started to undo all that had been done in the reigns of her father and brother there were many people who supported her. She made Parliament withdraw the Prayer Books and the Articles, and did all she could to restore the "old religion." Much uneasiness was caused by the stern measures that she took, and this turned to opposition and fear when she began to kill and torture Protestants. More than 1,000 clergy who had married were driven from their churches, and in three years nearly 300 men, women and children were burnt alive.

The Thirty-nine Articles.

It was Queen Elizabeth, the next sovereign, who really made the Reformation lasting in England. The Pope would not recognise her as the lawful ruler of this country; so, like her father, she threw off the authority of Rome. But, unlike Henry the Eighth, she did not stop there. Her first Parliament undid all the work that Mary had done,

CARDINAL WOLSEY AND HENRY VIII



W. F. Mansell.

The picture above, taken from Sir John Gilbert's painting in the Guildhall, London, shows Thomas Wolsey, English cardinal and statesman, and Henry VIII. Wolsey became a member of the King's Council and was for some time a royal favourite. Eventually, however, he was dismissed from his high appointments and divested of most of his honours and was charged with high treason. He died before he could be brought to face his judges.

and followed this up by ordering that a Prayer Book based on those of Edward the Sixth should be used everywhere. Soon afterwards the Thirty-nine Articles, which contained the beliefs of the Church of England, were issued.

Both Popular and Wise.

Elizabeth was a popular and a wise queen, and was strong enough to force her wishes on the nation. There were two sets of people who disagreed with her religious policy—those who still

supported the Pope and thought the Reformation had gone much too far, and those who were bitterly hostile to the Pope and thought the Reformation had not gone far enough. Elizabeth got Parliament to make laws to punish both sorts of opponent, and in the course of a few years had established the Church of England so firmly that it has remained almost unchanged ever since. And surely no amount of wisdom and foresight could better have triumphed than did that of Elizabeth.



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LATIMER PREACHING BEFORE EDWARD VI

Hugh Latimer, one of the great leaders of the Reformation, had a pulpit erected in the King's garden and preached long sermons to Edward VI. Though little more than a boy, Edward listened with wrapt attention to the discourses. In his reign, by order of Parliament, a Prayer Book was compiled and put into use throughout the Kingdom.

KING VERSUS PEOPLE



By permission of the Corporation of Liverpool

W. F. Mansell

"WHEN DID YOU LAST SEE YOUR FATHER?"

This striking picture, by W. F. Yeames, R. A., hangs in the Walker Art Gallery, Liverpool. It deals with one of the most touching episodes of history, when the young children of Charles I. were questioned as to their royal father's movements.

IF you were to visit the library of the House of Commons, to examine the Journals of the House for the year 1621, you would discover a very strange thing, *i.e.*, that certain pages of that particular record are missing. They were destroyed long ago, not by fire or accident or carelessness, but by the anger of a well-meaning but unreasonable king. In the margin you would find a note which says: "King James, in Council, with his own hand rent out this Protestation."

That short sentence is an eloquent comment on one of the most interesting and important periods of our history, a period in which yet another great struggle between the sovereign and the nation was fought to a finish. In that conflict a King of England lost his liberty, life and throne, and for eleven years after his execution there was no king at all.

The First Stuart.

No one could have guessed at the beginning of the struggle that such dreadful and amazing things would come about, but it was quite clear,

soon after James the First (the earliest of the Stuart sovereigns) came to the throne, that there were serious differences of opinion between him and his subjects on the matter of government.

He imagined that because the Tudor monarchs who reigned before him had often bent Parliament and people to their will, *he* could do the same. But what had been possible for them proved to be impossible for him. The nation itself had gradually become stronger and different in character, and even Elizabeth, whose power had been firmly based on her own wisdom and patriotism, and on the goodwill which these qualities aroused in her people, had discovered towards the end of her life that the nation would not give her the same freedom in government as she had once enjoyed.

But an even greater cause of trouble lay in the nature and opinions of James himself. He did not realise, or, at least, he would not admit, that those who had gone before him had governed pretty much as they liked, not because they had the *right* to do so, but because

they were *permitted* to do so. In a vain effort to prove that the sovereign was entitled to such power, he invented a new idea known as "the Divine Right of Kings," and the way in which he reasoned it out was something like this:—

By Divine Right.

"Before the Reformation the Popes, as Christ's representatives, claimed control over all Christian churches and kingdoms. Henry the Eighth, in transferring the power of the Pope to himself, so far as England was concerned, took over the same authority, and became the representative of Christ (and so of God) in England. That is, he ruled by divine right, and this right passed to his heirs and successors.

"The sovereign is therefore above the law, and may alter or break laws as he pleases. He is above Parliament, and Parliament must do as he wishes. He is above the people, and the people must submit to his will in all things. He is above the Church, and the Church must obey him."

To strengthen his argument James quoted an old saying that "the king can do no wrong." But he used it in a way that had never been intended. What this saying really

meant was that it was the king's ministers, rather than the king himself, who were responsible to the nation for the things done (by them) in the name of the sovereign. But James twisted the sense of the phrase so as to make it mean that whatever the king does is right, and nothing that he does can be wrong.

Free Speech Claimed.

This theory of divine right very soon brought the king into conflict with Parliament, whose privileges had been won with difficulty during struggles that were spread over hundreds of years. James said those privileges were not a matter of right, but a matter of "grace," *i.e.*, of kindness on the part of the sovereign. Parliament claimed the right to free speech in its debates, the right of its members to be free from arrest if they should criticise the king during those debates, the right to decide what taxes should be levied and how they should be collected, and the right to discuss any matters whatsoever that concerned the welfare of the nation.

James denied that Parliament had any rights whatever in any of these and certain other important matters. He interfered in elections and he arrested members of Parliament. He invented

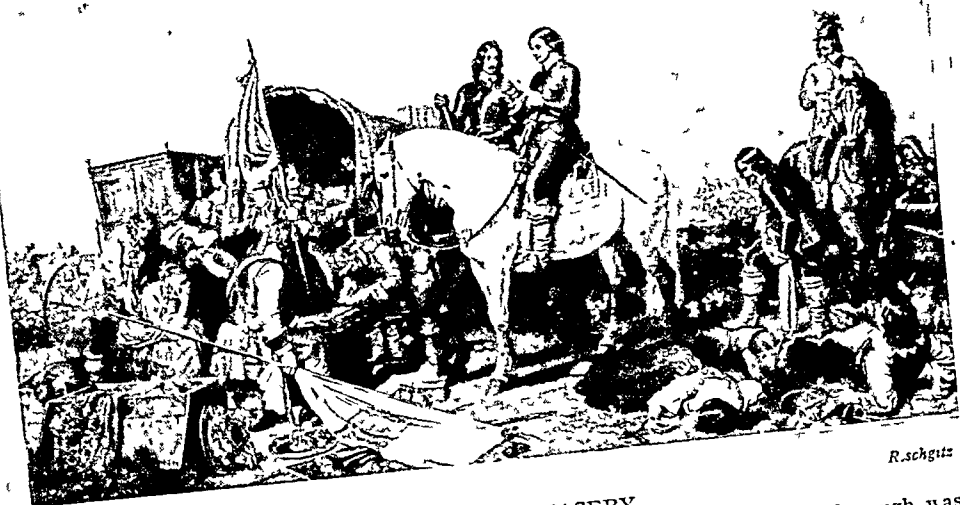


Asselgitz.

THE BURIAL OF JOHN HAMPDEN

The well-known British painter, Philip H. Calderon, R.A. (1833-98), was noted for his historical pictures of which this is one. It may be seen in the Salford Art Gallery and depicts the scene at the funeral of John Hampden, the great English statesman and reformer. Hampden refused to pay a share of unjust taxes put upon the people by Charles I.

By permission of the Salford Corporation.



R. schütz

CROMWELL AT NASEBY

Naseby, which was fought at the village of that name, a few miles from Market Harborough, was a great battle in the English Civil War. In the engagement Cromwell's, or the Parliamentary, side gained the victory. The picture, now in the Museum at Berlin, was painted by Charles Landseer.

new taxes and levied them without parliamentary sanction. He broke such important agreements as the Magna Carta. He persuaded or forced the judges to say that his illegal actions were legal, and gradually he compelled Parliament and the nation to accept things which were really quite unacceptable. He quarrelled steadily and obstinately about religion, money, and foreign policy, and, though he started his reign with the loyal support of his people, he managed to offend almost everybody within a few years.

Matters Grow Worse.

But, though he contrived to get his own way for a while, he was not able to go on doing so. The main reason for this was the usual one—lack of money. He tried to get enough without having to ask Parliament for it, but in the end he failed. Every now and then the need of money compelled him to summon a Parliament, but on each occasion Parliament began by condemning his illegal acts, and refused

to grant him funds unless and until he agreed to govern in a proper manner.

So matters grew steadily worse, until, twenty-two years after he came to the throne, this king—who had been described as "the wisest fool in Christendom," because he combined great stupidity with great learning—died, a sad and disappointed man.

The Confidence of Favourites.

The mistakes which James had made were repeated by his son Charles the First, who had been brought up to believe firmly in the divine right of kings. Like his father, he was well-meaning and religious; but, like his father, he gave his confidence to "favourites," whose advice was unsound, and did a great number of illegal things. Quite early in his reign he fell out with Parliament, and the quarrel that had begun in the previous reign went on and grew more and more serious. Charles arrested and imprisoned members of Parliament, levied

taxes on his own authority and adopted various harsh measures for compelling people to pay them, and broke all kinds of laws and agreements without the slightest consideration.

Reaping his Harvest.

Unfortunately for him, Parliament had discovered its strength, and proceeded to use it, sometimes behaving almost as unfairly as the king himself. For eleven years Charles managed to do without any Parliament at all, but he was really only making matters worse, and when at last he had to summon it he reaped the harvest that he had sown. This new Parliament began by passing various Acts that lessened his power. Then it drew up a long list of illegal things which it said the king had most unwisely done.

Charles answered by trying to arrest five members in the House itself, whereupon Parliament demanded control of the army, so that it could *force* him to keep his promises and to govern

properly. But the king refused to be humiliated in such a fashion, and the result was a civil war that lasted for seven years.

There is no room to trace here the steps and battles and defeats and victories of that unhappy conflict. It split up the country into two hostile sections; it divided father from son and brother from brother; it caused suffering and loss, and stopped progress in many directions. Largely owing to the trained forces which Oliver Cromwell gradually got together, the king was defeated, though it was his own deceitfulness that brought about his undoing in the end. He was tried in Westminster Hall, condemned to death, and on January 30th, 1649, was taken from St. James's Palace to Whitehall. There, on a scaffold erected for the occasion outside the Banqueting Hall, he was beheaded.

Thus ended a struggle which had been in progress for nearly half a century.



CHARLES I. LEAVING WESTMINSTER HALL

Here is Sir John Gilbert's pictorial rendering of the scene in Westminster Hall as Charles I. left after his trial. The King maintained his dignity throughout, stoutly maintaining that the proceedings were totally illegal. His figure is one of the saddest in our history.

THE EXECUTION OF CHARLES I

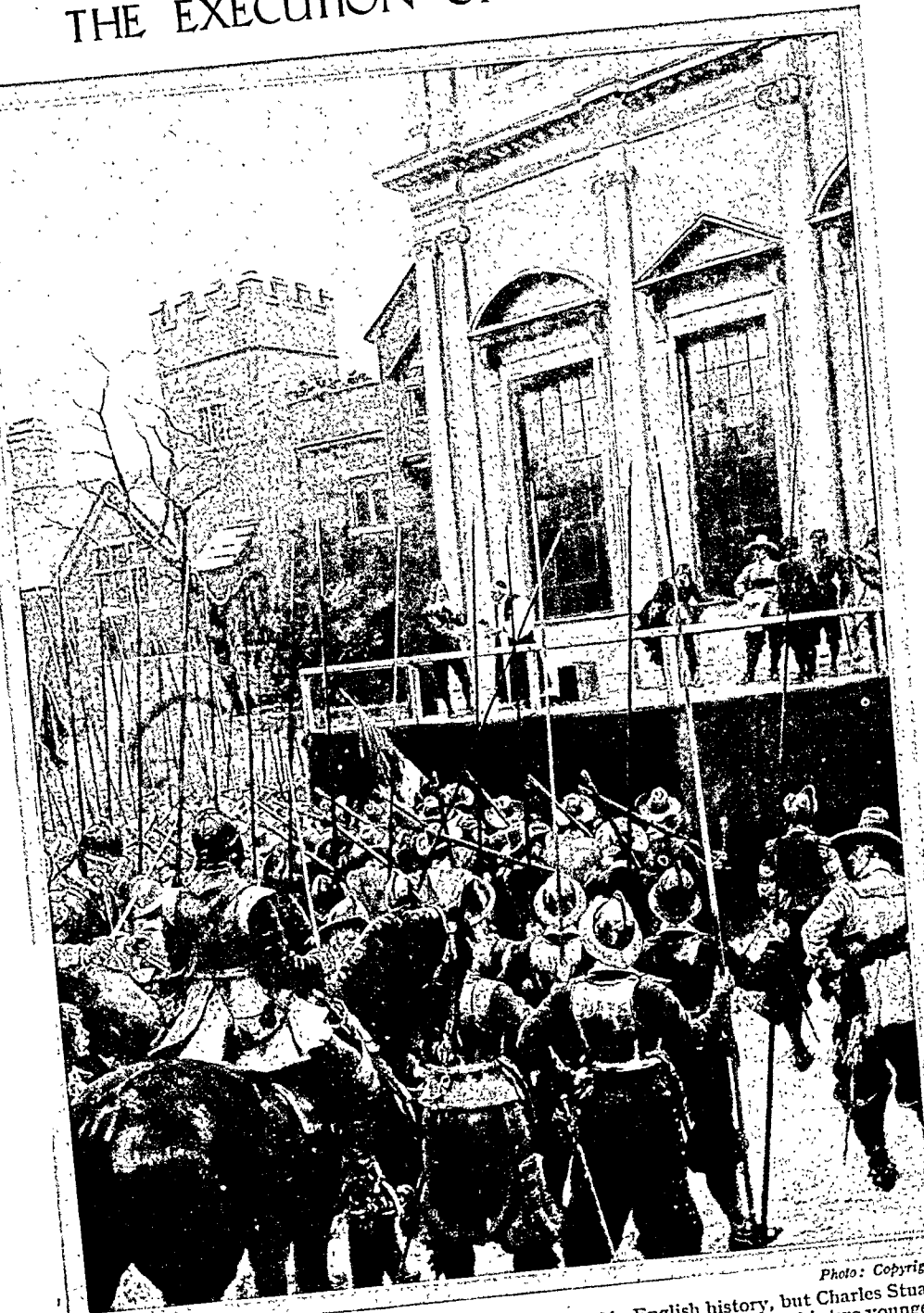


Photo: Copyright.

The execution of a king was a thing never before heard of in English history, but Charles Stuart resigned himself to his fate with calmness and dignity. Having said farewell to his two youngest children, Elizabeth, aged thirteen, and Henry, Duke of Gloucester, who was only eight, the King was beheaded on a scaffold erected outside the Banqueting Chamber at Whitehall.

JOHN CHURCHILL, DUKE OF MARLBOROUGH



Specially drawn for this work.

As the Duke of Marlborough was sailing along a river in France with some of his soldiers a large boat approached them. The Duke saw that it belonged to the enemy and hastily stopped his own vessel. But it was too late. The French drew up alongside and boarded the English boat.

WHEN Queen Anne came to the throne, most of Europe was at war. England was fighting the French, for Parliament had decided that France was getting too powerful.

At that time our finest soldier was John Churchill, the Duke of Marlborough. For many years he had commanded our soldiers brilliantly, and every man in his army loved and trusted him.

"Corporal John."

They called him "Corporal John," and no matter whether the day went against them or not, their faith in "Corporal John" never wavered. The men knew that he would find some way of defeating the enemy, and he generally did.

His foes said that he won his battles because he was lucky, but his victories were due to his careful planning of even the tiniest details. He never lost his head, even in the hottest moment of battle.

He was sometimes fortunate too. There is a story told of how he was one day sailing along a river in France, in company with some of his soldiers. Suddenly a large boat came sailing to-

wards them. The Duke saw that it belonged to the enemy, and hastily he stopped his own vessel.

But it was too late. The French drew up alongside and boarded his boat. Then indeed did the soldiers think that the day was lost—for what would the English do without their bold leader? What shame for him to be captured so easily by the French!

It so happened that the Duke was dressed in plain clothes that day. The French soldiers looked at him, and did not know him to be the great General, who had won so many battles against them. They took his soldiers captive, but let the Duke himself go free, with one or two of his servants. He sailed thankfully down the river, and so escaped to win more battles against the enemy.

The Battle of Blenheim.

One of Marlborough's greatest victories was at the Battle of Blenheim. This was fought against the French, near the village of Blenheim on the banks of the Rhine. At first the day went against Marlborough, but by his wonderful generalship he managed in the end to defeat the French com-

pletely. They were put to rout, and the victory went to the Duke.

A Motto to Remember.

"Patience conquers all things" was one of his mottoes, and because of his patience and courage he won one of the most famous victories in our country's history. When England heard the news, songs and poems were written in his honour, and all the people hailed him as a hero.

Parliament gave the great General

an estate. Blenheim House was built and named in honour of the brilliant victory, and to this day it is held by the Duke's descendants. The circuit round Blenheim Park, which is near Woodstock, in Oxfordshire, is twelve miles.

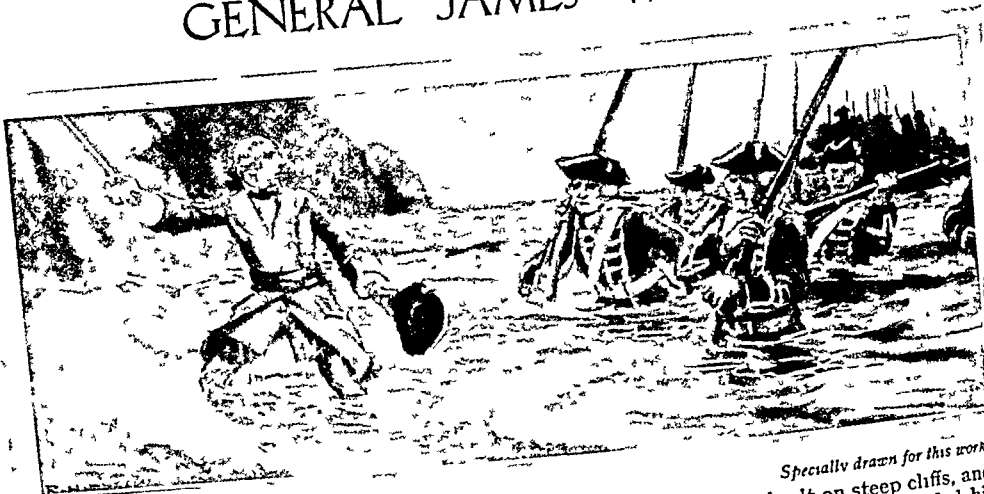
Can you think of any other battles which Marlborough fought for England? There was Ramillies in 1706, when the French received a crushing blow, and the victory at Malplaquet three years later—this great soldier's last military engagement.



Specially drawn for this work

One of Marlborough's greatest victories was at the Battle of Blenheim. This was fought against the French, near the village of Blenheim on the banks of the Rhine. By wonderful generalship the Duke managed in the end to defeat the French completely. They were put to rout, and the victory went to the English.

GENERAL JAMES WOLFE



One of Wolfe's great victories was at a town called Louisburg. It was built on steep cliffs, and the French had fortified it so strongly that it seemed impossible to take. Wolfe landed his troops in secret and surprised the enemy.

IN the year 1740 a pale, lanky boy of thirteen entered the army of George II. His name was James Wolfe, and surely never did a boy look less like a soldier. He was weakly and often ill, but his spirit was so strong that he would never give in.

Across the Atlantic.

In those days Britain was fighting against the country that was her faithful ally in the Great War—France. James Wolfe saw a good deal of fighting whilst he was very young, and when he was only twenty-three he was already a lieutenant-commander, and commanded a battalion.

Some years later, when we were trying to get Canada from the French, Wolfe was sent over the Atlantic to fight the enemy in North America. Here he was to prove himself a splendid hero and a fine soldier.

One of Wolfe's great victories was at a town called Louisburg. It was built on steep cliffs, and the French had fortified it so strongly that it was almost impossible to take. Wolfe landed his troops in secret, surprised the enemy, and filled them with terror. Before they could rally, the British guns were on them, and Louisburg was ours.

Wolfe was so quick and full of energy,

that he seemed to be everywhere. "Wherever he goes," said the enemy, "he carries a mortar in one pocket and a 24-pounder in the other!"

Like all great men, he had jealous enemies among his own countrymen. When he was made a colonel at the age of thirty-one, someone spoke slightly of him to the King, George II.

"If he is not stupid, he is certainly mad," said the man.

"Mad, is he?" said the King sharply. "Then I wish he would bite a few of my other generals!"

To Take Quebec.

Wolfe went back to England because of his health, and then once again he crossed the Atlantic with an army—this time accompanied by the biggest fleet England had ever sent out. His orders were to take Quebec, the strongest French fortress in Canada.

The town stood at the mouth of the great River Lawrence, which froze in the winter time. It was built at the top of very steep cliffs, and the fortress was well garrisoned. Montcalm, the French General, felt quite safe. He knew that if he stayed inside the fortress until the winter the river would then freeze, and the British fleet would have to go away.

It was in June that the English

STORMING THE HEIGHTS OF ABRAHAM



Specially drawn for this work.

The night of the attack was foggy and dark when the British ships moved silently up the river to the chosen landing-place. At a spot now named Wolfe's Cove the men landed. Above them towered the great cliffs called Abraham's Heights. General Wolfe sent volunteers up the cliffs; and the men, clutching at tufts of grass and out-jutting rocks, silently swarmed up. The way was found! Up went the whole army after the volunteers.

arrived, so there seemed plenty of time. Wolfe tried to land many times, but he did not succeed. Montcalm would not stir out of his fortress, and it seemed as if winter would come and nothing would be accomplished.

The Night of the Attack.

Then the General went down with fever. He was in despair, for he knew that there was little time left before the winter. He begged his doctors to "patch him up somehow," for he longed to make one more attack. And, somehow, the doctors did his bidding and made him well enough to get on with his work again.

He chose a spot at which he determined to land his troops, at the foot of a very steep part of the cliffs on which Quebec was built. Then for three days he pretended to try and land at every other spot save the one he had really chosen. This one was not guarded by the French, for they thought that the cliffs at that point were impossible to climb.

Then came the night of the attack. It was foggy and dark when the British ships moved silently up the river to the chosen landing-place. At a spot now called Wolfe's Cove the men landed. Above them towered the great cliffs called Abraham's Heights, which Wolfe had resolved to climb.

He sent volunteers up the cliffs, and the men, clutching at tufts of grass and out-jutting rocks, silently swarmed up. The way was found! Up went the whole army after the volunteers, Wolfe with them, and the impossible was done!

At Dawn of Day.

Day dawned as soon as the army was at the top. Montcalm looked over the plain behind Quebec, and there, before his amazed eyes, were the red-coated soldiers of the English waiting for him. How could they have got there? The French General was filled with astonishment and dismay.

He sent out his troops to meet them, and the battle began. It was a fierce



When General Wolfe was first hit by a bullet at Quebec he wrapped his handkerchief tightly round the wound and went on with the attack. Then he was struck in the chest, and fell. His men carried him to a safe place and tended him, but they saw that he was dying.

Specially drawn for this work.



By gracious permission of His Majesty the King

THE DEATH OF WOLFE

General Wolfe lay dying in the moment of victory at the taking of Quebec. "They run! See how they run!" shouted one of the officers. "Who run?" asked Wolfe. "The enemy, sir," answered the officer. "God be praised! I die in peace," smiled the General, happily. This picture may be seen at Kensington Palace, London. It was painted by Benjamin West, the Anglo-American artist. On the spot where the English commander fell are the words: "Here died Wolfe—Victorious."

one, but the French were no match for the English. Their lines broke, and the day was ours. The French General, Montcalm, was killed, to the great sorrow of his men.

It was not long before Wolfe was wounded, for a bullet hit him on the wrist. He would not stop for that, but, wrapping his handkerchief tightly round the wound, he went on with the attack. Then he was hit in the chest and fell. His men carried him to a safe place and tended him, but they saw that he was dying.

Quebec is Won.

He fainted, and when he came to himself again he heard one of his officers shout: "They run! See how they run!"

"Who run?" asked Wolfe, in a moment of anxiety.

"The enemy, sir," answered the officer.

The General smiled happily. Then he gave orders for cutting off the retreat of the French. At the end he

lay back, saying: "God be praised! I die in peace."

Quebec was won and Canada was ours. To-day Canada is among the most loyal of our great dominions overseas, and very proud to be under the Union Jack.

A United Monument.

There is a beautiful monument erected to General Wolfe in Westminster Abbey, and in Quebec is one for both Wolfe and Montcalm. On it are these words:

"Their valour gave them a united death,

History has given them a united fame,
Posterity a united monument."

But Wolfe's two greatest memorials are Canada itself and the words marking the spot where he fell: "Here died Wolfe—Victorious."

The remains of General James Wolfe were brought to England and his grave is at the church of St. Alfege at Greenwich.

THE CLERK WHO MADE AN EMPIRE



Specially drawn for this work

The two officers fought a duel with pistols. Clive fired and missed, whereupon the other went up to him with his weapon and threatened he would shoot his opponent there and then. "Shoot away!" said Clive scornfully.

WHEN young James Wolfe was a boy, dreaming of soldiering, another lad was growing up, about the same age, called Robert Clive. He lived near Market Drayton, in Shropshire, and was the despair of his family.

He was a dunce at school, always up to mischief, disobedient and daring. He loved fighting, and was happiest when he was in the midst of a scrap with his friends or his foes. He was afraid of nothing.

Into the Breach.

One day he was building a dam with his friends, trying to make a stream flow where it was not meant to. Suddenly the dam broke and the water poured through, making all their work useless. Clive saw this, and at once he threw himself into the torrent of water and stopped up the breach in the dam with his own body, bidding his companions mend it quickly.

Another story is told of him which shows his lack of fear. One day, when he was in the army, he played cards with a brother officer, and Clive accused him of cheating. The two fought a duel with pistols. Clive fired and missed, whereupon the other went up to him with his pistol and threatened

that he would shoot Clive there and then unless he took back his words. "Shoot away!" said Clive scornfully. "I said you cheated and I say so still!"

"You must be mad!" said the other, but he did not attempt to shoot.

Clive had twelve brothers and sisters, and his parents wondered what they could do with such a scapegrace as their eldest son. Then one day they had an offer from a friend, who said that he would take him to India and make him a clerk in the offices of the East India Company. So off he went.

In those days there was trouble between the French and English traders in India. The French wanted to push the English out of the country and so get all the trade for themselves, and there were always battles of some kind going on between the various settlers.

Settling at Madras.

When Clive reached the Madras office of his company he tried to settle down to his work, but he hated it. He was born for action, and to sit on a stool all day long was misery to him.

But soon Madras was taken by the French and Clive was made a prisoner of war. He escaped and ran to Fort St. George, where he was welcomed by the

English, who were still holding out there. Now Clive was happier—there was something lively happening!

He soon threw up his work as a clerk and joined his Company's army as an officer. He had been a soldier at heart all the time, and he was born to lead men.

Through Shot and Shell.

Once, at the battle of Pondicherry, Clive heard that his comrades were getting short of gunpowder. It was during the hottest fighting, but he cared nothing for that. He threw down his rifle and ran straight through the shot and shell to fetch more powder.

To his indignation, an officer who had seen him running back to fetch the powder told everyone that Clive was a coward because he had run away in the middle of the battle. But before very long the whole matter was looked into, and when it was found that instead of being a coward Clive had performed a daring and brave act, the officer was made to apologise to the young soldier before the whole regiment.

The French at this time were very strong. Nearly the whole of Southern India was theirs, and a clever Frenchman called Dupleix was made Governor. Things came to such a pass that it was soon seen that the French would shortly be masters of India and the British would have to leave.

"Keep Your Powder Dry!"

Then Clive stepped in. He saw that if only we could attack and take the town of Arcot we might save ourselves from shameful defeat. He was then twenty-three, but, young as he was, he was given command of the British force.

Clive's army was made up of 300 Hindus, 200 English and eight guns. This little force started out on their march to Arcot through a terrific storm.

"Keep your spirits up and your powder dry!" commanded Clive, and



Specialy drawn for this work
During the hottest fighting at the Battle of Pondicherry, Clive ran straight through the shot and shell to fetch more gunpowder.

this order was faithfully obeyed. The little army put the Arcot garrison to flight, and Clive marched into the town with a hundred thousand spectators looking on and without a single shot being fired!

"We will seize the fort and strengthen it in case the enemy come back," he said. And when the enemy *did* return, 10,000 strong, the English were able to hold out for fifty days against them.

Bribes for Surrender.

The foe offered Clive enormous bribes to surrender, saying that if he refused they would storm the town and put everyone to death.

"Your army is a rabble!" answered Clive scornfully. "If you want to know what real soldiers are like, come

and attack us! Then we shall show you!"

The enemy made three furious onsets, but to no effect—they could not take Arcot, so bravely was it held by the little army against the ten thousand of the enemy.

This was only the beginning of Clive's great success. He went on winning battle after battle, and soon there was no more famous soldier than he. He stayed in India until the year 1753, and then, tired out, he returned to England.

Welcomed at Home.

He was welcomed as "a heaven-born General" by the State, but his father, who had been only too glad to be rid of his scapegrace boy ten years before, met him with the remark: "The booby has some sense after all!"

Two years later Clive went back to India as Governor of Madras. He had not been back very long before a horrible crime aroused the English to fury. The King, or Nabob, of Bengal marched on Calcutta, and captured all the English there. He placed them—145 men and one woman—in a little room, about 20 feet square, which had only a small hole for ventilation.

The night was terribly hot, and in the morning when the door was opened, only twenty-three of the prisoners were alive. All the rest had either been suffocated or had died raving mad.

The Battle of Plassey.

Clive made it his first duty to avenge this horrible deed. He set sail with his troops, arrived at Calcutta, and took it. Then he



Specially drawn for this work

"If you want to know what real soldiers are like," said Clive, "come and attack us!" The enemy made three furious onsets, but to no effect—they could not take Arcot, so bravely was it held by the little army.

determined to finish with the French and their traitorous native allies once and for all, and to turn them out of India, leaving the English in possession.

He fought the battle of Plassey with an army of 3,000 men. The nabob had 40,000 foot-soldiers and 15,000 horse-soldiers, as well as fifty big guns. Clive held a council of war, for the odds against them were terribly heavy, and defeat meant disaster. The council resolved not to fight.

Clive left the meeting, and for an hour sat under a tree, thinking. At the end of that time he arose, determined to fight, despite the odds.



Specially drawn for this work

Clive left the meeting of the council, and for an hour sat under a tree, thinking. At the end of that time he rose, determined to fight, despite the odds.

Reward for the Victor.

"Prepare for battle at sunrise," he commanded, and his troops obeyed.

The battle lasted an hour; then the nabob's huge army faded away, leaving all its guns, beasts, food supplies and goods in the hands of the British.

This ended for always the French efforts to stand alone in India. The British became the real governors, and Clive returned triumphantly home to be made Lord Clive. The scapegrace of a clerk had created a great Empire, and earned his country's highest honours.

It is worth while to consider what this last statement means. Robert Clive had received no military training, yet he became one of our greatest generals. He was so troublesome at home that his father was delighted to get him a "writership" or clerk's position abroad—yet the young man proved himself an able statesman as well as a brilliant general.

When Food was Scarce.

The whole truth of the matter is that Clive was a born leader, always assured of the affection and support of those who served under him. As an example of this, you may be sure that the garrison of Arcot could not hold out so long against the French without there being a shortage of food within the garrison. Yet Clive's Sepoys or native soldiers sent to him:

"Give our rice," they said, through their spokesman, "to our European comrades. They need the food more than we do. The gruel that remains after the rice has been boiled will suffice for us."

Could any commanding officer have had more loyalty than that displayed by Clive's unselfish Sepoys, who were willing to give up their very food?

A GREAT MISUNDERSTANDING



Specially drawn for this work

Once the Declaration of Independence was passed, war between Britain and the American settlers was inevitable. The regrettable conflict lasted for seven years, and the above picture is a cameo of the Battle of Lexington. This was the first engagement and marked the outbreak of the campaign. It was fought on Lexington Common, about eleven miles from Boston, Massachusetts.

“WE therefore, the Representatives of the United States of America . . . appealing to the Supreme Judge of the world for the rectitude of our intentions, do . . . solemnly publish and declare that these United Colonies are . . . absolved from all allegiance to the British Crown.”

An Empire of the Future.

These words are taken from the final paragraph of one of the most important and tragic documents in British history. By it a great empire over the sea—still in its infancy, but growing very fast, and already comprising a population of three million people—cast off the authority of the Mother Country and loyalty to the sovereign of it.

Less than three centuries before, the continent of America, where this empire of the future had begun, had never been heard of by the nations of Europe. But within thirty years of the stirring discovery of Columbus, four of the leading countries of the Old World had laid claim to parts of it, and the life-story of a great nation had commenced.

The defeat of Spain in the time of Elizabeth gave England freedom for growth at home and a desire for growth across the ocean. The first attempts at colonisation in this almost unknown continent, carried out under Sir Humphrey Gilbert and Sir Walter Raleigh, were gallant failures, but they roused men's minds to an understanding of what might be done. In the reign of James the First a little band of gentlemen and merchants of London formed themselves into a company, and obtained a charter to colonise the southern part of the vast unmapped territory that had been named Virginia. A Plymouth company was given the right to do the same in the northern part.

Settlers of the West.

From that time onward there was a steady stream of settlers flowing westward to America. The reasons that urged them to leave England were many, among these being love of adventure, failure in their native land, desire for wealth, and protest against the religious tyranny of the first two

Stuart kings. In a little more than 100 years there were thirteen colonies on the western seaboard of the continent, and the progress made in the founding of an overseas England was amazing. By 1700 the population numbered a quarter of a million, and for the next century it doubled itself every twenty-five years.

The settlers and their descendants built towns, sowed grain, made roads, cleared away forests, founded their own systems of government, established law courts, set up industries, organised trade, fought and overcame the Indians, and gradually extended their boundaries westward. In doing these things they became wider in outlook and more independent than the people at home, but they remained deeply attached to the Motherland and were loyal subjects of the king. They aided England in her wars, read English books, called their towns and streets by English

names, followed English fashions, and looked upon themselves as Englishmen living in the "New England" across the ocean.

Why We Lost America.

Then came disaster, the causes of which are not difficult to understand. After two sovereigns who were almost wholly foreigners and had to depend very much upon their ministers, there came to the throne a third George, born in England, trained by his mother to "Be a King!" and demanding a large share in government. He was obstinate, and often unwise in his reasoning and action, and neither he nor his ministers, nor the nation, understood empire-building as we do to-day.

The thirteen American colonies, after being left pretty much alone for a long time, now found the king and his ministers interfering in their affairs, and (as *they* thought) not treating them



Specially drawn for this work.

In the firm objection by settlers to taxes imposed by the Mother Country, resisters joined together in bands known as "The Sons of Liberty" and burned every scrap of stamped paper in the colony, so that the English Government should not receive the duties.

with the respect and consideration to which they were entitled. It is unfortunate that the change of policy should have come at this moment, for the colonists were feeling the need of the protection and help of England less than they had done, since a great and glorious war had resulted in the defeat of the French and relieved them of the threat of French invasions from the north and the west.

Laws Made at Home.

European nations had always believed that colonies should be developed mainly for the benefit of the mother country; and even the English, who were better at colonisation than most other peoples, held this notion to some extent, and had passed a series of laws which hampered American trade. The colonists could not import or export goods from or to any country except through England, and in English or colonial ships; they were not allowed to manufacture at all, even for themselves, certain sorts of goods, for fear that home industries would suffer; there were other kinds of merchandise which they might not export even from one colony to another.

All these restrictions had been borne patiently, but when the Government proposed a new tax to make the colonists help to pay for the recent war there was an outcry.

"Sons of Liberty."

Of course, it was only fair that they should contribute towards the cost of the war, which had been partly for their defence, and towards the cost of future protection. It was not so much the idea of the tax as the way in which it was to be levied that roused them. By the Stamp Act they were called upon to affix to every legal document, pamphlet, almanac, newspaper and pack of cards a stamp of certain value. The colonists objected to this very strongly, and went on to claim that they ought not to pay any taxes at all

unless they were represented in Parliament. They joined together in bands known as "The Sons of Liberty," burnt every scrap of stamped paper in the country, and vowed not to import any goods from England until their demands were granted.

By Right of Might.

The result was that English merchants could sell no wares in America and before very long Parliament repealed the Stamp Act and certain import duties. But to show that it had the right to do this sort of thing it levied taxes soon afterwards on the import of certain other articles, including tea.

This annoyed the colonists intensely and in New York and Boston and other places there were at various times fights between British soldiers and Americans. The refusal to drink tea while there was a tax upon it led to a dismayed report from the East India Company that they had 17 million pounds of it lying unsold in their warehouses.

Whereupon Parliament determined to force the colonists to buy tea, and sent several ships loaded with it to American ports. These were promptly sent back, with their cargoes, except in the case of Boston, the main centre of disturbance, where the vessels lay at anchor, the governor refusing to have them sent back, and the people refusing to let the tea be brought ashore. Finally, a number of the citizens, disguised as Indians, boarded these ships at night, and emptied the cargoes into the harbour.

The Boston Tea Party.

This affair was known as "The Boston Tea Party," and it brought matters to a crisis. Parliament forbade that Boston should continue to be a port, which put an end to its trade. Parliament also took away the charters from the whole State, which thus lost its cherished privileges.

But the Americans would not endure

THE BOSTON TEA PARTY



Specially drawn for this work.

A number of the citizens of Boston, disguising themselves as Indians, boarded the English ships by night and emptied the cargoes of tea into the sea. The affair became known in history as "The Boston Tea Party," and it brought matters to a head in the dispute between the American colonists and the authorities in the Old Country.

this humiliation. Meetings were held in the chief towns, and a "Congress" of representatives of all the states met and decided to stand out for their rights. A protest sent to the King remained unanswered, and then the colonists took up arms to resist the English soldiers who were preparing to compel them to submit. In various skirmishes they proved that they could fight trained troops; and, under the command of General Washington, they began to build up a proper army.

Independence Declared.

Then some of the bolder and more extreme leaders drew up a Declaration of Independence and presented it to Congress. In spite of their grievances, the Americans did not really want war; they merely wanted freedom from taxation and irritating interference. The Declaration was only passed by a majority of one, and even that had to be specially arranged.

But when it was once passed war was inevitable. In that regrettable conflict, which lasted for seven years, the English fought badly and were often badly led. The Americans, urged on by a feeling of injustice, and inspired by a passionate love of the country they were making, strove valiantly

under wise leadership. The latter stages were made more hopeless for the British because France and Spain—partly out of sympathy for the colonists, but much more out of revenge and a dislike for this country—assisted the Americans.

The Loss to Britain.

So by-and-by there came a bitter day for Britain; by a treaty signed in Paris we acknowledged the independence of the American colonies, and thus—through an obstinate king, a few rather stupid ministers, and a lack of sympathy on both sides—lost what might have been the finest unit of our great Empire.

Right down to our own times Independence Day has been celebrated as a great national holiday in the United States of America. It takes place every year on the Fourth of July, which is the anniversary of the day when Congress adopted the Declaration of Independence so long ago as 1776. Sometimes, at the modern celebrations, the actual Declaration is publicly read.

The occasion is one of great jollification among the crowds who keep the holiday so wholeheartedly, and there are even social gatherings in London among the American residents and visitors.



Specially drawn for this work
In the Reign of James the First two companies were formed to colonise America. One company obtained a charter to occupy the southern part of the country, named Virginia; and another the northern part. This company sailed from Plymouth, and its followers were known as the Pilgrim Fathers (seen above as they landed) because they sought also for religious liberty.

THE FATHER OF THE AMERICAN PEOPLE



SURRENDER OF CORNWALLIS TO WASHINGTON

Ris. Fgitz

Yorktown is a place in Virginia to which, in the American War of Independence, Lord Cornwallis withdrew his entire force. He was besieged and compelled eventually to surrender to Washington, and the picture above is one of this important episode in history. With this incident the war practically concluded.

ONE of America's greatest men, who helped to found the American nation, was George Washington. He was born in 1732, and both his mother and his father taught him that truth and justice were two of the finest things in life.

George Washington is known as "The boy who could not tell a lie," but it is not so much for the things he could *not* do that we honour him, as for the things he could and did do so well.

A Dunce at School.

Washington was not a very clever boy at school, and he did not have much education. He liked mathematics and found them very useful to him later on, when he took up surveying work. When he was old enough, he nearly entered upon a seafaring life, for a midshipman's commission was offered to him. But he chose to become a surveyor instead, and to follow the interesting career of exploring and mapping little known parts of the vast country of America.

When England fought the French from 1756 to 1763, Washington fought too, and proved himself a very good soldier. He was made a colonel, and was loyal and faithful to England.

Then when the great misunderstanding came between our country and America, Washington stood for his own people. He led the American soldiers against the British, and after much fierce fighting, drove our soldiers from the country. Then England, to our great sorrow, lost all her fine colonies in America, except Canada.

The First President.

After the war, the country fell into a state of great disorder and lawlessness. Washington waited for the time to come when he might step in and bring order out of chaos. Some years later his chance arrived. The best men of the States came together, and set up a good Government. America was made a Republic, with a President at its head. This President, the first one the States had ever had, was George Washington.

Now Washington had a great work before him. It was his task to make the people into a nation, and to make laws to bring peace, justice and happiness to everyone. The President gathered wise and strong men round him, and soon the new country was put on firm foundations.

When the news came that Europe

NEWNES' PICTORIAL KNOWLEDGE

as fighting against Napoleon, many Americans advised Washington to take the side of the French and fight for them. But Washington refused. He knew that his own nation was only just recovering from war and revolution, and he did not want to ruin it almost as soon as it had begun.

His Honoured Name.

For six years Washington worked hard for his country, and well deserved the name he was given—"Father of the People." America owes much of her present greatness to him, and mourned him bitterly when he died. England knew him to be a great man too, and both our fleet and Napoleon's army saluted the memory of the first President of the United States.

Like so many other great men, Washington exercised a wonderful in-

fluence upon those who served under him. In one battle his forces were virtually defeated, but he turned the defeat into victory simply by his indomitable personality.

How did Washington, any more than Clive, know how to become both a great statesman and also a general of outstanding brilliance? His chief military experience had been organising defences against Red Indians, and we know he had little schooling. There can be no answer to the question save that when opportunities cropped up there was the man ready to grasp them.

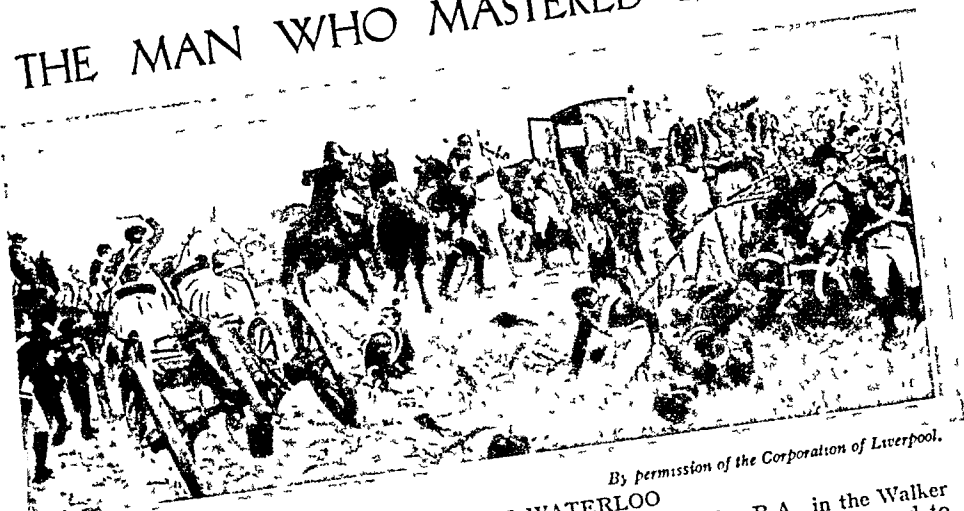
The Americans built a fine city in honour of their first statesman and called it Washington, in his memory. It is one of the greatest cities of America, and there, rising nobly above the surrounding trees, is the Parliament House.



WASHINGTON'S FAREWELL TO HIS GENERALS

This famous painting, after the artist Matterson, shows George Washington leaving his generals at the conclusion of the War of Independence, when he assumed the office of President of the United States of America. The strain of the campaign left him greatly broken in health.

THE MAN WHO MASTERED EUROPE



F. Mansell

THE EVENING OF WATERLOO

By permission of the Corporation of Liverpool.

You may see the original of this fine painting by the artist Ernest Crofts, R.A., in the Walker Art Gallery, Liverpool. It depicts Napoleon on the field of Waterloo. He had planned to conquer England, but was utterly defeated instead. The carriage in which Napoleon rode became one of the most notable vehicles in history.

On the rocky island of Corsica, in the year 1769, was born a baby who was to grow up into the most powerful man in the whole of Europe. His name was Napoleon Bonaparte.

The little Corsican was not a loveable boy. He cared for nothing but fighting, ordering his comrades about and quarrelling with them. He had a warlike spirit right from the beginning, and always his mind was set on being a soldier. His favourite toy was a brass cannon, which can still be seen in Corsica.

At a School for Soldiers.

When he was about nine years old, he was taken to France to go to school. Every morning on his way there he met a soldier. Napoleon used to have with him a piece of white bread for his lunch, and this he would give to the man in exchange for a hunk of the hard brown bread that was the soldier's fare in the army.

"Why do you give your fine white bread away for a coarse piece of brown?" he was asked.

"I shall be a soldier one day, so I must get used to eating it," answered the boy.

Soon Napoleon went to a military school, where his life was hard, for the rules were very strict, and there were few holidays. He was not a favourite with either masters or pupils, for he cared for no one but himself, and all his thoughts were taken up with the life he would lead when he was a soldier. He spoke the French language badly, and he had the fierce, warlike spirit of the Corsican race, which prevented him from making friends. He was ill-mannered and domineering, and only happy when he was fighting or giving commands to his companions. He loved to read books about war, and all through his boyhood he looked forward to the time when he would be a man and able to command others.

A Battle in the Snow.

One snowy winter, Napoleon for the first time had a taste of what it was like to be in command of a fight—it was only a mimic battle, but the boy took it very seriously. He built a fine fortress out of the snow, with the help of the other boys. They thought it was just play, but Napoleon gave his whole mind to the construction of a real stronghold. He was very happy, for

NN

self the Emperor of France and the King of Italy. He who had helped France to become a Republic now gave her a monarch once again.

He went on his way, winning many battles, cowing every nation but England, and making each own him as master. Napoleon longed to conquer England too, but Nelson was on guard, and the bold Corsican could not defeat him. Prussia fell to him, and Austria, but in Spain he was driven back by Wellington, the Iron Duke of England. Then Napoleon set out to conquer Russia.

In Retreat from Moscow.

But this campaign was a terrible failure. It is true that Napoleon's army reached Moscow and won the battles they fought on the way, but when they arrived at the great town, it was deserted. Hardly had the tired soldiers settled down in it when it was set on fire, and the French had to leave the city.

Then began the famous Retreat from Moscow. It was winter, and terribly cold. Little food was to be had, and many soldiers died of starvation and cold. Russian horsemen galloped up and attacked the straggling army, killing hundreds of the miserable soldiers. Napoleon knew his first great defeat. France lost faith in him, and forced

him to give up the throne. He was sent to the island of Elba and forbidden to rule in France again. For a year Napoleon fretted in exile, and then he left the island and went back to France once more, resolved to conquer England and win back all the power that he had lost.

England's "Iron Duke."

Men flocked to his flag in thousands, and Napoleon once more entered on his life of commanding others, which was to him his greatest happiness. But this time it did not last very long. The Iron Duke met him at Waterloo, and defeated him utterly. He was taken prisoner and sent by the English to the lonely island of St. Helena. There he died in exile, a man who very nearly had the whole of the civilised world at his feet.

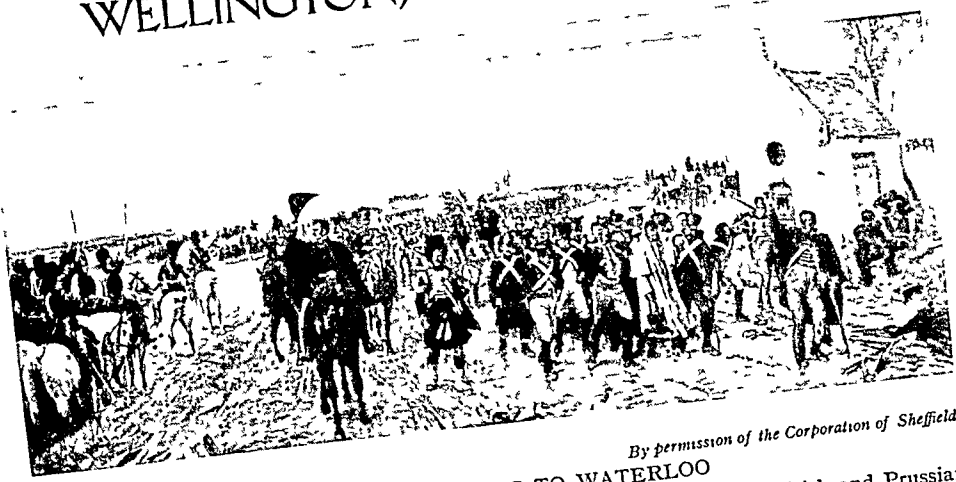
Honour, Justice and Mercy.

Napoleon was a great man, and there was no smallness in him. He would have been greater still if he had cared for something other than himself. He had wonderful gifts, but he used them all to one end—to make himself as powerful as possible—and it was this that brought him to disaster. He sacrificed honour, justice and mercy, and many thousands of lives to gain what he wanted, and in the end it all slipped from his grasp.



Specially drawn for this work
Napoleon was taken prisoner and sent by the English to the lonely island of St. Helena. There he died in 1821, a man who came near to having the whole of the civilised world at his feet.

WELLINGTON, THE IRON DUKE



By permission of the Corporation of Sheffield.

Rischgitz.

FROM QUATRE BRAS TO WATERLOO

Quatre Bras is a village in Belgium where a battle was fought between British and Prussian armies and Napoleon. The fight was very stubborn, and, towards the evening, the Duke of Wellington ordered an advance which flung the French aside and led up to the Battle of Waterloo. This picture, which hangs in the Mappin Art Gallery at Sheffield, is the work of Ernest Crofts, R.A. It shows the Iron Duke on the march from Quatre Bras to the field of Waterloo.

IN 1769, the same year as that in which Napoleon was born, a baby boy, Arthur Wellesley, first saw the light. He it was who, more than forty years later, defeated the great conqueror of Europe.

He was a shy boy, and rather dull. He was very keen on mastering his profession as a soldier, and he meant to rise as high in it as he could. It was not long before he showed what he could do, for when he was sent to India to fight, he soon rose to be a general.

A Nation in Revolt.

It was at this time that the great Napoleon was conquering Europe. None seemed able to withstand him, except Nelson, who defeated him at Trafalgar. Every country fell to the conqueror, and feared him.

England resolved to attack Napoleon, and to march on him through Portugal and Spain. Napoleon's brother was on the Spanish throne, but the Spaniards were in revolt. Arthur Wellesley was chosen to lead the British forces. He went over to Spain and began the Peninsular War.

The British General had a difficult

task before him. He did not dare to trust his Spanish or Portuguese allies. His own officers had not had much experience, and, hardest of all, he had very little money with which to carry through the expedition.

But Wellesley cared nothing for difficulties. He knew that he could trust his own men, and that they would do exactly as he commanded them. He attacked the French armies with confidence, and Napoleon's force suffered terrible losses.

Wellesley won some fine victories, and defeated the French time after time. He freed Spain and Portugal, and when he finally returned to England he was hailed as a deliverer and made Duke of Wellington. Not long afterwards Napoleon was forced to give up his crown and go to Elba.

The "Black Sheep."

When Napoleon, a year later, returned to France to try once more to regain his power, Wellington was sent to meet his old enemy. Well it was for Europe then that England had such a fine General.

The famous soldier was called the

Iron Duke, because of his strong will and marvellous powers of endurance. His men did not love him, but they obeyed him without question, for they feared and respected him more than any other man. At that time our army was mostly composed of men who had proved themselves to be "black sheep" in some way or other, and such men had to be ruled by fear. Wellington demanded that each man should do his duty faithfully and well, and he himself was a fine example to them, for nothing could make him turn aside from the difficult tasks he had to face.

The Iron Duke met Napoleon in battle for the last time on the Field of Waterloo, near Brussels. The French General had a large army, and his idea was to keep the British forces scattered, and to prevent the Prussian General, Blücher, from joining Wellington.

At Waterloo.

Napoleon defeated the Prussians, forcing them to retire. Then he turned his attention to the Iron Duke. The British army was much smaller than that of the French, but Napoleon found that he could not crush it. Wellington's



Risberg.

By permission of the Corporation of Bristol.

AT QUATRE BRAS

In this desperate battle and at a very critical stage, when the French Guards and their supporting cannons were making a most desperate effort to break through the English square, a Scots piper inspired the confidence of his comrades by coolly playing his bagpipes just outside the lines. The original of this picture is in the Art Gallery at Bristol.

THE MEETING OF NELSON & WELLINGTON



Though they were born within a few years of one another, and despite the fact that the sailor prepared the way for the victory of the soldier over Napoleon, Lord Nelson and the Duke of Wellington are believed to have met on only one occasion. This meeting took place in Downing Street, London, and is illustrated above. Our picture is after the painting by the artist, Knight.

men stood solidly against the enemy, and would not give way. Then Napoleon heard that General Blücher was bringing his Prussians to our help and in dismay he attacked again. Still the British stood firm, and then Blücher's army arrived and began to attack Napoleon on the flank.

Then victory was ours, for the French broke their lines and fled. The Prussians pursued them, but the English, weary with their long day's stand, took a much-needed rest. Napoleon fled too, and arrived at the coast. Here he gave himself up to the captain of the *Bellerophon*, a British man-of-war, and so ended his amazing career.

Thus was Europe delivered from the tyrant ruler, and every nation heaved a sigh of relief. Wellington was proud of his men, but when, after the battle, he was shown the long lists of dead and wounded, he wept.

"Nothing is worse than victory," he said, "except defeat!"

The Tyrant of Europe.

Wellington did not have the far-reaching ambitions of Napoleon, but he was a much greater man. He cared more for his duty and his country than he cared for himself, and because of this his country honoured him and was proud of him. He died in 1852, mourned by his countrymen, whom he had saved from the tyrant of Europe. He had a long and useful life, and both in war and peace had served his country faithfully and well.

He was buried beside Nelson in St. Paul's Cathedral, and

"Under the cross of gold
That shines over city and river,
There he shall rest for ever
Among the wise and the bold."



Photo. W. F. Marshall.

By permission of the Corporation of Sheffield.

THE MORNING OF WATERLOO

In this picture, painted by Ernest Crofts, R.A., shows the field of Waterloo on the morning of the morning after the battle, which marked the final overthrow of Napoleon. British troops, fighting in squares, as a Scots pipe custom at the time, withstood attack after attack for a period of six hours. Finally, the French took to flight precisely as the Prussians came up.

NELSON, THE GUARDIAN OF ENGLAND



NELSON ON BOARD THE *SAN JOSEF*

In this scene we see Horatio Nelson standing on the quarter-deck of the Spanish man-of-war *San Josef*, receiving his sword from the vanquished commander in token of surrender. This incident took place at Cape St. Vincent, and was one of the great British sailor's early triumphs

NO name stands higher in the list of famous seamen than Nelson's. He was the finest Admiral Britain has ever had, and because of his work in defeating Napoleon at sea, Wellington was able to destroy the conqueror's forces on land.

On Their Honour.

Horatio Nelson was a weakly, delicate boy; but, like James Wolfe his spirit was determined and strong, and he would never let his weakness of body conquer his resolute will. It is said that when he was a youngster, attending school with his brother, there came a day when the snow lay very deep. Horatio and his brother started out, but soon returned, saying that the snow was too deep for them to go to school.

"If that is so, I have nothing to say," said their father. "But I should like you both to try again, and I put you on your honour not to turn back unless it is really necessary."

The boys started out once more. The elder brother soon wanted to give up, but Horatio refused.

"We are on our honour, remember," he said. "We must go on."

It was in this spirit that Nelson lived his life and made his name glorious.

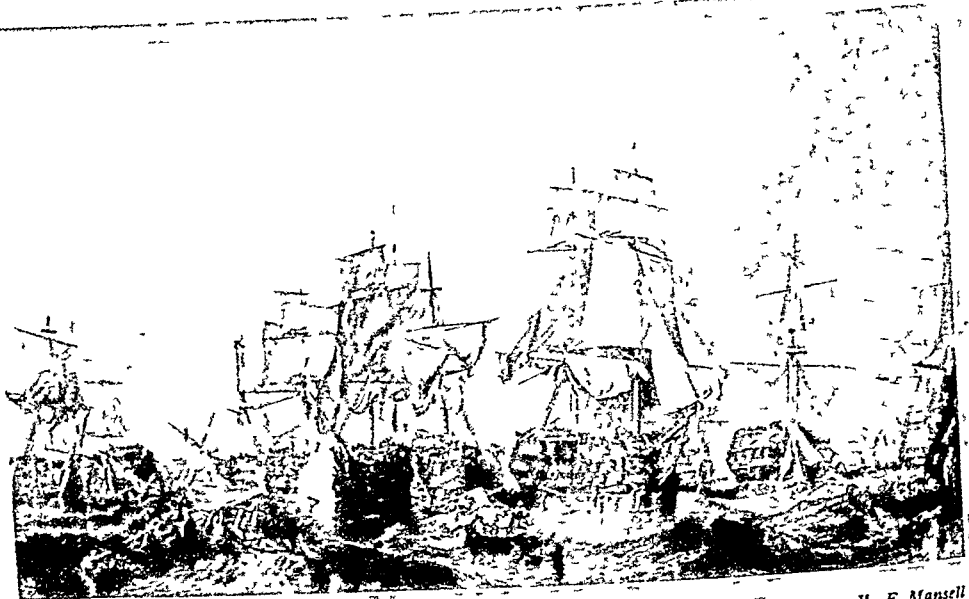
When he was twelve years old, Nelson went to sea. He was a small and delicate boy, but yet he willingly bore the hardships of his first voyage—a journey to the Arctic regions. He soon showed that he was a fine seaman, and by the time he was twenty, he had sailed to many different countries. He was made a commander, and was adored by his men, for his daring spirit appealed to every sailor.

It was when Napoleon's power began to be felt in Europe that Nelson's chance came. He was thirty-one then, and had already shown that he was great enough to tackle even such a difficult task as destroying Napoleon's power at sea. He was put in command of the battleship *Agamemnon*, and sent out with a squadron to look for the enemy in the Mediterranean.

The Battle of St. Vincent.

So the struggle between Napoleon and Nelson began, and not till the British Admiral died did he cease his great task.

Nelson's first big victory was in the battle of St. Vincent. He was wounded



THE BATTLE OF TRAFALGAR

One of the greatest sea battles in the whole of history was that fought at Trafalgar. For over a year Nelson had been trying to catch the French ships, but they gave him the slip and sailed through the Straits of Gibraltar. Then he pursued them right out to the West Indies and back again. After that he gave them battle at Trafalgar, in which engagement he lost his life. He died murmuring: "Thank God, I have done my duty." The picture is by Clarkson Stanfield.

and lost his right arm, but little he cared for that—he had defeated the enemy, which was what he had set out to do.

A little later Napoleon sailed for Egypt to try and create a French Empire in the East. Nelson hunted for him all up and down the Mediterranean, trying to find the French Fleet. After Napoleon had captured Malta, and landed his army in Egypt, Nelson discovered his fleet anchored in a bay at the mouth of the River Nile.

In Trafalgar's Bay.

He captured or destroyed every vessel in the fleet except four which escaped. This victory, a most crushing one for the French, was called the Battle of the Nile. Nelson was wounded for the second time, and lost the sight of one of his eyes.

Some time later Nelson was put in command of an expedition to the Baltic, and there he won a brilliant victory at

the Battle of Copenhagen. Napoleon's plans were again destroyed by the little British Admiral, who pursued him like a shadow, always waiting for a chance to defeat him.

Then came the famous Battle of Trafalgar. Napoleon had determined to invade England, and had given orders that the French and Spanish Mediterranean Fleet were to join his other naval forces at Boulogne. Nelson went to the Mediterranean to try and catch the French fleet as it sailed up to Boulogne. His ship was the famous *Victory*.

For over a year he tried to catch the French ships, but they gave him the slip, and sailed through the Straits of Gibraltar. After them went Nelson, and pursued them right out to the West Indies and back again.

Then he gave them battle at Trafalgar. The fight was fierce and furious. At the very height of it, Nelson sent out his famous signal—

"England expects that every man will do his duty."

England won the battle—but the hero was killed. He lived long enough to know that victory was ours, and then he died murmuring, "Thank God, I have done my duty."

The Nelson Column.

The whole country mourned for Nelson, for he was loved and honoured by all. He had broken Napoleon's power, and had made it possible for Wellington to defeat the tyrant. No Englishman feared invasion after the Battle of Trafalgar.

Nelson was buried in St. Paul's Cathedral, and Trafalgar Square in London was built in memory of his

famous victory. In the middle of the square, on a tall, slender column, stands a figure of Nelson in full admiral's uniform. He will always be honoured by Britons as one of the finest seamen our country has ever had.

In Mr. W. Clark Russell's "Life of Nelson" we may read the following beautiful words: "No Englishman has left a more valuable memory. The name of Nelson is as magical to-day as it was when he was fighting the battles of his country. It is the inspiration of all that is honourable, fearless, patriotic to the very crown and summit of the meaning of the words."

"He was as simple as a child, he was as tender and affectionate as a woman and his heart was that of a lion."



THE DEATH OF NELSON

The Battle of Trafalgar was fierce and furious. At the very height of it Nelson sent out his famous signal: "England expects that every man will do his duty." Then, whilst the fight still raged, a ball struck the Admiral in the shoulder and penetrated his chest. He was carried down into the cockpit where he died, one of our greatest national heroes. This picture is taken from a fresco in the Houses of Parliament painted by D. Maclise, R.A.

CECIL RHODES; EMPIRE BUILDER



Specially drawn for this work.

One day, at Oxford University, Cecil Rhodes was standing with his tutor before a map of Africa, and he suddenly drew his hand across the almost blank district north of Cape Colony. "That's my dream," he said. "All red!" He meant, of course, that he wanted to see that large tract of Africa under the British flag.

CECIL RHODES, one of the greatest of our Empire-builders, was the son of the Vicar of Bishop's Stortford, in Hertfordshire. He was born in 1853, and was not very strong. He went to school when he was old enough, and there he conceived a wonderful ambition. He wanted to do something great for the British Empire. He read stories of our explorers and Empire-builders, and always he dreamed of the day when his name might be among those of the famous men of the past.

Diamonds Discovered.

When he was seventeen his health was bad, and the doctor ordered him to go to a warmer country. So he was sent out to a brother, who was a cotton-planter in Natal. There he soon recovered his health and became well and strong, for the pure South African air was just what he needed.

When he had been with his brother for a year, diamonds were discovered in South Africa, and Cecil Rhodes went to the diamond fields to search for the precious stones. He worked very hard for a year, saved as much as he could, for he knew that he would never be able to do much towards his great ambition. Some remained a poor man. And there he

must become rich, and then he could perhaps follow the path he had mapped out for himself.

For a time Rhodes returned to England to finish his studies at Oxford University. He had not for one moment forgotten his dream. One day he was standing with his tutor before a map of Africa, and he suddenly drew his hand across the almost blank district north of Cape Colony.

"That's my dream," he said. "All red!"

He meant, of course, that he wanted to see that large tract of Africa under the British flag and marked red on the map as a British possession.

Still thinking this, he returned to Africa. Then he set to work to get a large fortune so that he might realise his dream as soon as he could. He became rich, and then set out on a tour over the land he had so often looked at on the map. He knew that it was a rich country, both in minerals and in farming.

The House of Assembly.

His next step was to enter the Cape Parliament and to become a member of the House of Assembly. Soon he was made Prime Minister. He also founded

CECIL RHODES, EMPIRE BUILDER

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a company for developing British trade in South Africa. He was a strong and determined man, who knew what he wanted and meant to get it.

It is said that he once met General Gordon, the hero of Khartoum. Gordon hated to be disagreed with, and few people cared to argue with him. But Rhodes was different, and at last Gordon said to him :

" You always contradict me, Rhodes. I never saw such a man for his own opinion. You always think you are right, and everyone else is wrong."

A Secret of Success.

But this was partly the secret of Rhodes' great success. He knew he was right, and he had the courage to say so and to act on his own opinion without fear of what anyone else might say.

He spent much of his money in buying land from the native chiefs, or paying them to allow him to open mines in their territory. He was very successful in dealing with them, and soon, little by little, more and more land came under the British flag. But sometimes there was war, when the natives plundered and murdered not only other tribes, but also white women and children. Rhodes especially had trouble with the Matabele. In the first war against them their chief, Lobengula, was defeated and disappeared. None took his place, and so the whole of his country came under Rhodes' control. It was named Rhodesia after him, and is a most valuable possession.

There came a day when, owing to a mistake made by a friend of his, Dr.



Sometimes there was war, when the natives plundered and murdered not only other tribes but also white women and children. Rhodes especially had trouble with the Matabele. In this picture we see his scouts as well as the scouts of the enemy at very close range.

Jameson, who led a raid into the rival Boer States, Rhodes was forced to resign his post as Prime Minister. But he was a great enough man to learn from a mistake, and it made no difference to his resolve to do his best for South Africa.

In the Matopopo Hills.

"You said that this set-back would be good for me," he remarked to a friend, "for you thought I was getting too stubborn and opinionated in my ways of thinking and acting. I want to tell you that you are right. This is a humbling of my pride, but it will be a splendid thing for me, because it will make me a far more reasonable and considerate man."

A man who can say a thing like that is truly great.

Soon the Matabele began to be troublesome again. They slew white women and children, and troops had to be sent against them. The natives hid themselves in the Matopopo Hills and were difficult to find. The British forces were not very large, and as a war would be most expensive, Rhodes determined to end the matter himself.

He was absolutely fearless, and one day, with a few unarmed attendants, he set off to the foot of the Matopopo Hills and pitched his camp there. This was a dangerous thing to do, because at any moment the natives might swoop down from the hills above and surround him. But Rhodes was not afraid. He knew that the Matabele admired fearlessness, and felt certain that they would not attack him.

Through the Passes.

He waited there in his camp, and then at last one of the chiefs came down to him and asked him to come to a council. This request might have been for a trap, but Rhodes accepted the invitation at once. Taking his interpreter

Some him, he fearlessly followed the command through the wild passes of the and there he

He soon came to where the rest of the chiefs sat. Then he and they held a council. Rhodes listened to all their complaints and grievances, and then he spoke.

"I am not angry with you for fighting us," he said. "But why do you kill our women and children? You do not deserve forgiveness for that."

The chiefs tried to excuse themselves, but Rhodes would not listen.

War—or Peace?

"That is past," he said. "Let us talk of the future. Which is it to be, War—or Peace?"

Then all the chiefs, lost in admiration of the fearless white man alone among them, cried out loudly together:

"It is Peace! We have said it! You are our father."

Rhodes went away from them, glad at the result of the council, but doubtful as to whether the Matabele would keep their word. They did so, however, and the trouble was ended. Now they are a friendly and useful people.

In this way, by courage, hard work and fearlessness, Rhodes won the native tribes and realised his great dream of a South African Empire.

He died in 1902, and in the Matopopo Hills, where he went to meet the native chiefs, is his lonely grave. It looks out over his great country of Rhodesia, and on his tomb are engraved the words "So much to do; so little done."

The Rhodes' Scholarships.

He would like to have done even greater things, but there are few men who have done so much. By his will Rhodes left his money to found the famous Rhodes' Scholarships, to help boys to be trained in true citizenship. Here are some of his words, taken from his will:

"My desire is that the students who shall be elected to the scholarships shall not be merely bookworms. Regard shall be had in the case of each

"WAR—OR PEACE" ?



The Matabele hid themselves in the Matoppo Hills and were difficult to find to end the matter himself. He was absolutely fearless and set off for the hills when one of the chiefs came down to him and asked him to come to a council he accepted. Then he and soon reached the place where the rest of the chiefs sat. "Which is it to be," he said, "WAR—OR PEACE?"

student to his qualities of manhood, truth, courage, devotion to duty, sympathy and protection of the weak, kindness, unselfishness and fellowship."

It was because he had these qualities himself that Rhodes was such a great man.

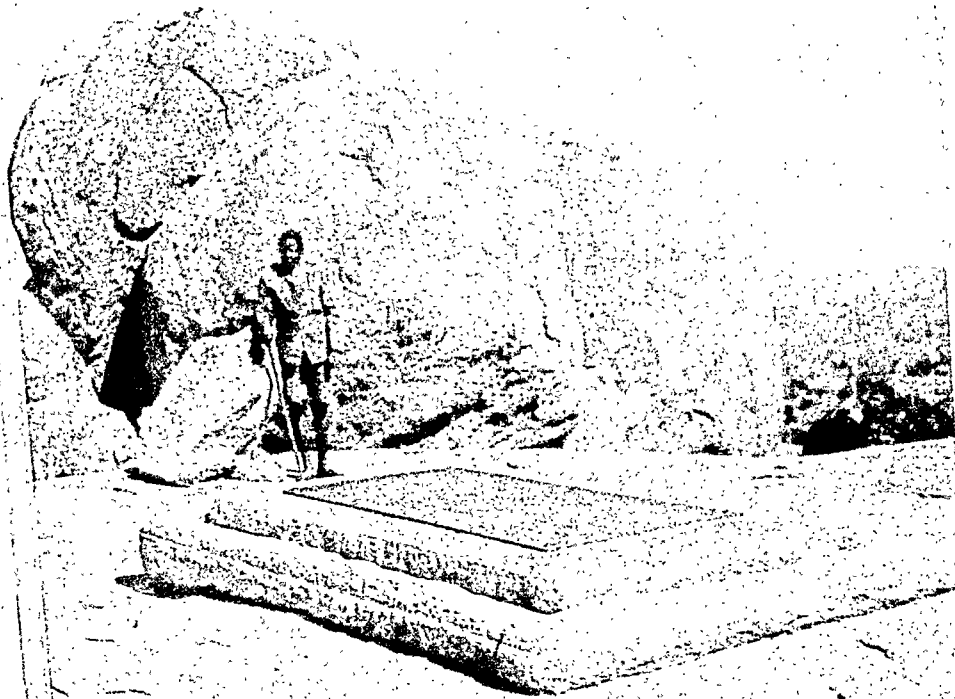
What Rhodesia Means.

To gain some idea of what Rhodesia means to the British Empire we have but to realise that its territory embraces upwards of 400,000 square miles. It is divided into two Provinces, Southern

Rhodesia and Northern Rhodesia, and possesses a most healthful climate.

Southern Rhodesia gives us tobacco, fruits, maize and many other valuable crops, and parts of it form excellent country for the raising of stock. It ranks very high among the gold-producing countries of the world.

It is most inspiring to us to think of the son of a country clergyman making up his mind that British South Africa should extend from the Cape of Good Hope to the Zambesi and being spared to see his dream fulfilled.



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WHERE CECIL RHODES LIES BURIED

photograph of the grave of Cecil Rhodes. It is situated in the Matoppos Hills, and his great country of Rhodesia. On the tomb are engraved the words: "So much to do; so little done."

Central News.

IN THE DAYS OF QUEEN VICTORIA



Rischgitz

THE CORONATION OF QUEEN VICTORIA

Sir George Hayter, R.A. (1792-1871), who painted the above beautiful picture, which is now in the royal collection at Windsor Castle, was appointed portrait and historical painter to Queen Victoria on her accession. The wealth of detail in this picture and the excellence of the portraiture make it a wonderful record of a memorable scene. When Queen Victoria ascended the throne this country was poor and full of unhappiness. During her long reign great prosperity came, as well as gas, electricity, steamers, railways and telephones.

WHEN Queen Victoria began her long and prosperous reign in the nineteenth century, a little boy was born. He may have been your great-grandfather, and perhaps your father will remember hearing him talk about the days of his childhood.

Children in the Mines.

George, as we will call him, grew up at a bad time. We had just finished our wars with France, and though we had defeated Napoleon, and victory was ours, the country was full of unhappiness. There were a great number of unemployed men, bread was very dear, and money was scarce. These are the things that happen after every war, no matter whether countries win or lose. George's father was a merchant, and during the whole of the boy's childhood trade was bad, so that George and his brothers and sisters often had to go without things they badly needed.

But George's family were far better off than many others. There were people so poor that they were no more than skin and bone, so little did they have to eat. The children of these

wretched men and women had no childhood at all. As soon as they could understand anything, they were hurried off to work. Babies of four and five were sent down the dark coal-mines, and some of them hardly knew what the sunshine was like. All day long they worked, some for twelve hours, some for fourteen or even longer. They got up before it was light and came home when it was dark. They were so tired then that they could hardly eat the poor food their mothers set ready for them.

George was sorry for these children, and so was his mother. Some of them went to the factories, and worked hard all day for a few pence, which were eagerly taken by the half-starved mother to buy food. George did not wonder that the boys and girls of the poor were so thin and deformed. He made up his mind that when he was old enough he would try to make things better for them.

No Free Schools.

George went to school and learnt reading, writing and arithmetic, and many other things. The children of the

o o

poor did not go to school, for their parents could not afford to pay for them to learn to read or write. There were no free schools then, as there are now. Most of the common people grew up unable even to write their own names.

Many of the parents of these miserable children were out of work because machinery had been invented which could do the work they had been used to doing, twice or three times as quickly. This meant that not so many hands were needed, and men and women lost their jobs. They were angry with the machinery that robbed them of their living, and often they tried to smash it, and caused riots. George saw one riot of spinners and weavers, and though he was sorry to see his uncle's fine new machinery destroyed, he could not help being sorry for the half-starving, miserable people who caused the riot.

The Child Slaves.

In those days workmen were not allowed to leave their native town or village to seek work elsewhere. So if they were out of work they knew that it was no use trying to find a job in another district. Those that did were caught and sent back at once. The discontented workmen were not even allowed to talk to one another about their troubles. They have Trade Unions now to protect them, but at that time such things were forbidden.

George thought that the children were made into slaves, and that the grown-ups were not much better. He knew all about slavery, for his grandfather, who had been to America, told him of the black slaves there who had been taken from their own country to America, and sold there to work on plantations for white masters. He told the boy how England had listened to a great man called Wilberforce, who pleaded for the slaves in our colonies, and how we had freed all our black men a few years before Victoria came to the throne.

But America still kept her black slaves, and George's grandfather told him many stories of them. He said that one day George would see the end of the bad old custom, and the boy wondered if he would.

When Railways Came.

As George grew older many inventions were thought of. One of the boy's most exciting treats which he never forgot, was when he was taken to see the steam engine called the "Rocket." It only pulled one coach, and that had no roof on it, but it was the beginning of the railway. From the funny old "Rocket" came the wonderful engines we see now.

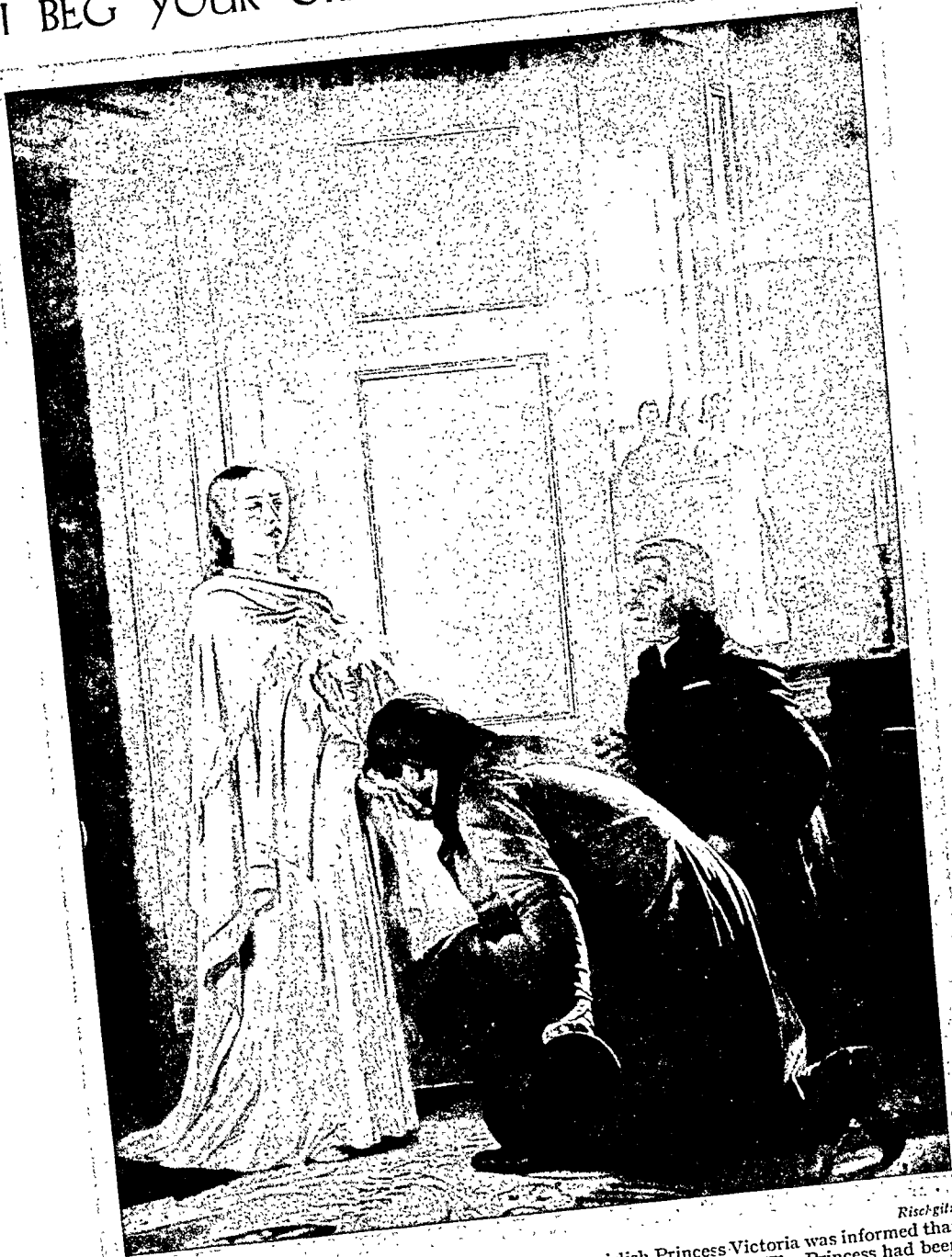
When George was a young man, trade was better, money was not so scarce, and things were getting cheaper. The Queen's husband, Prince Albert, opened the Crystal Palace, which at that time was in Hyde Park, in London, and was moved to Sydenham Hill later on. The great glass-roofed place housed a fine exhibition of goods from all over the world, and was one of the wonders of 1851. You can still see the Crystal Palace, and when you wander beneath its thousands of panes of glass you will, perhaps, imagine the great excitement it caused about eighty years ago.

Starting the Penny Post.

George was glad to hear that laws were being made to prevent children from working such long hours. Food was cheaper, and the poorer people became healthier and stronger because they were no longer half-starved. As Victoria's reign went on, the country became richer. More work was found for the people, and labourers were now allowed to move about from place to place if they wished. People were happier.

George saw the coming of policemen, and was greatly excited when he heard of the Penny Post. He was glad to see the postmen delivering letters, and he

"I BEG YOUR GRACE TO PRAY FOR ME!"



Risch gilt.
 In the above picture we are shown the scene when the girlish Princess Victoria was informed that William IV. had died in the night and that she was Queen of England. The Princess had been roused from sleep at five o'clock in the morning and appeared with a shawl over her night attire. The news was conveyed by the Archbishop of Canterbury, the Lord Chamberlain and others, who had driven post haste from Windsor. "I beg your Grace to pray for me!" were Victoria's first words on hearing the news. The painting is by Wells.

welcomed the dustmen who came to collect the household rubbish.

When he heard that America had freed all her black slaves and put an end to slavery, he remembered his grandfather's words, and was glad. He thought of the days when he had looked at the poor thin children in his own town, and remembered how he had thought they were slaves too. He hoped that soon there would be free schools for these children, so that they could learn to read and write and be happy. Before he died he saw these schools springing up everywhere, and he smiled to see the happy, laughing children that came running out from them at playtime

Her Diamond Jubilee.

And not only at home but also overseas the youthful George, who grew up in the reign of Victoria the Good, would have seen great development. All the while British possessions were growing apace. New colonies were founded and older ones developed. There were no

wars of serious proportions and a period of peace and prosperity came upon the land. When she had reigned fifty years Queen Victoria celebrated her Jubilee—ten years later, in 1897, her Diamond Jubilee.

Present and Past.

George's life was set in a marvellous century. He saw big things come, such as gas, electricity, steamers, railways, and telephones, and little things such as the useful lead pencil and box of matches.

Your life and mine are set in a wonderful age too. You can tell of wireless and cheap electricity, even in your short years, and your father can tell of motors, aeroplanes, and other things. The times we live in are the present, but each day the present slips away into the past and becomes history. Let us hope that our century will be made wonderful, not only by its inventions and discoveries, but also by its generations of wise, great-hearted men and women.

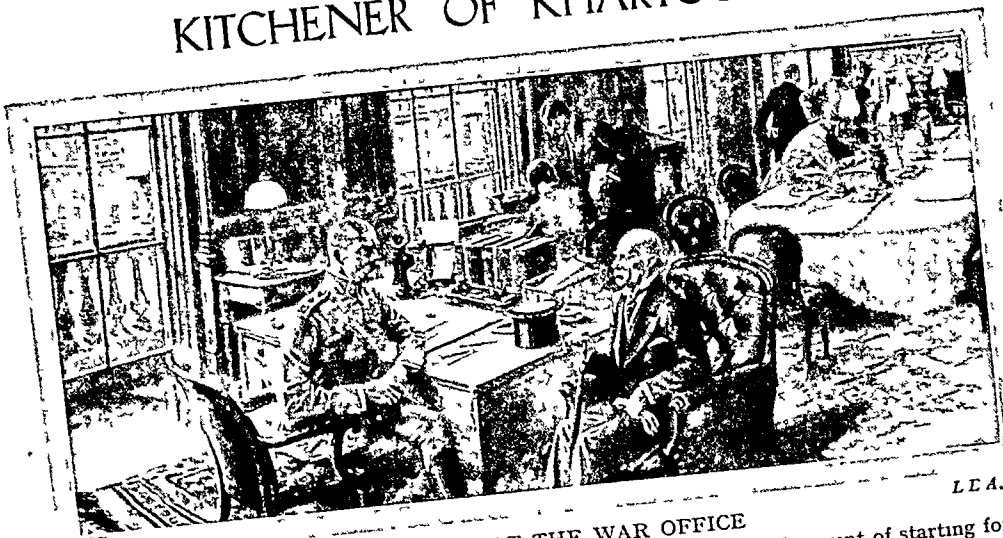


Ruschgitz.

THE GREAT EXHIBITION

Many of you will know the Crystal Palace, which now stands on Sydenham Hill, near London. This vast glass structure originally occupied a position in Hyde Park, where it housed what was known as the Great Exhibition of 1851—the first of its kind ever held. The exhibition was visited by upwards of 6 million people; and this picture shows Queen Victoria and the Prince Consort walking through the building

KITCHENER OF KHARTOUM



L. E. A.

KITCHENER AT THE WAR OFFICE

When the Great War broke out, Earl Kitchener of Khartoum was on the point of starting for Egypt. He was at once called to the War Office, for the whole country looked to him to save them from danger. In the above drawing we see him in his room at the War Office, in conversation with another great soldier, Earl Roberts of Kandahar, who died in France in the early months of the conflict.

IN the years 1850 to 1870 a dreamy boy was growing up. He was inclined to idleness, but this was sternly checked by his soldier-father. The boy was Horatio Kitchener, a name that in years to come was to be known and honoured from one end of our Empire to the other.

Kitchener entered the army and became a soldier. He spent many years in Eastern countries, especially in Palestine and Egypt, and studied the land and the people. This knowledge of country and native character was later very useful to him.

An Anglo-Egyptian Army.

One of his first big tasks was to produce a good Anglo-Egyptian army in Egypt. He said that "the native soldiers were splendid, if only they would not run away." It was his job to teach them not to run, and this he did.

He soon had a good native army which fought side by side with British soldiers in the Soudan campaign, by which Kitchener avenged the murder of General Gordon at Khartoum.

Peace and prosperity followed the war, for Kitchener was as good a Governor as he was a soldier.

The seat of government was transferred to Khartoum, and the city was rebuilt on a much grander scale. The great soldier then became known as "Kitchener of Khartoum," or "K. of K."

The Boer War.

Kitchener served his country well during the Boer War, when we fought against the Boers in South Africa. He was made Commander-in-Chief, and when untrained men were sent to him from England, he taught them to ride and shoot, and with them eventually won the war.

Kitchener then went to India, and served his country there. He sailed to Australia and New Zealand, and helped those countries to form their fine armies. When the Great War came, we reaped the benefit of Kitchener's work, for both the Australians and the New Zealanders hurried to our help, and proved themselves fine fighters.

In 1914 came the news that we were

about to go to war with Germany. Kitchener (who had just been made an Earl in return for his great work for England) was on the point of setting off for Egypt. He was at once called to the War Office. The whole country looked to K. of K. to save them from their danger.

Before many weeks had gone by Kitchener had created vast new armies. He made arrangements for their food, clothing and training, for this stern, silent man had a marvellous brain and did not know the meaning of the word "impossible." He worked as he had never worked before, and, what was even more, he made others work too, and got through the enormous task with complete success. Because of his wonderful recruiting work, he managed to transform Britain into a great military Power, and four years later our enemies were defeated.

Honoured by the Empire.

But Kitchener did not live to see the victory. It was arranged that he should go to Russia to take command of the military situation there. He set out on the *Hampshire*, meaning to steam

by the Orkneys and the Shetlands, accompanied by an escort of destroyers. But the path chosen was laid with mines by the enemy, and had not been swept by our mine-sweepers.

Sunk by a Mine.

The *Hampshire* struck a mine, and went down with nearly all hands, for the escort of destroyers had turned back because of bad weather, and therefore could not stand by to rescue the unfortunate men. Kitchener was drowned, and England could not believe the dreadful news.

"K. of K. drowned," said all the placards, and everyone said, "It can't be true! What shall we do without K. of K.?"

So died one of our greatest generals; but the work he had done for us remained, and the great armies he had created fought for Britain and saved her from shameful defeat. And now K. of K's name is honoured wherever the Union Jack is flown.

As happened in the case of Cecil Rhodes, there are to-day what are known as Kitchener Scholarships enabling ambitious young men to study.



KITCHENER'S PEACE CONFERENCE AT VEREENING

An historic military group photographed at the conclusion of the Boer War. Lord Kitchener will be easily identified. On his right is General Louis Botha, and on Botha's right is De Wet, the famous and elusive Boer soldier. General Botha later rendered loyal service to the Empire.

L.E.A.

EARL KITCHENER OF KHARTOUM



Freese and Shepherd.
A studio portrait of Horatio Herbert Kitchener, 1st Earl Kitchener of Khartoum and Aspell, who took command at the outbreak of the Great War. He created vast new armies and made arrangements for the food, clothing and training. A stern, silent man, he had a marvellous brain and worked as he had never worked before. "K. of K." was born at Ballylongford, in Ireland, and served his Queen or King and Country in almost every part of the Empire.

H.M.S. HAMPSHIRE'S LAST MISSION



Central News.

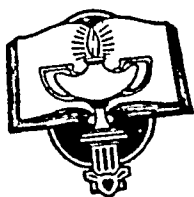
In this photograph we see Lord Kitchener actually in the trenches during the operations in the Dardanelles. Nearest to the camera is General Maxwell, and the officers at this point were within fifty yards of hundreds of Turks in the opposing trenches.



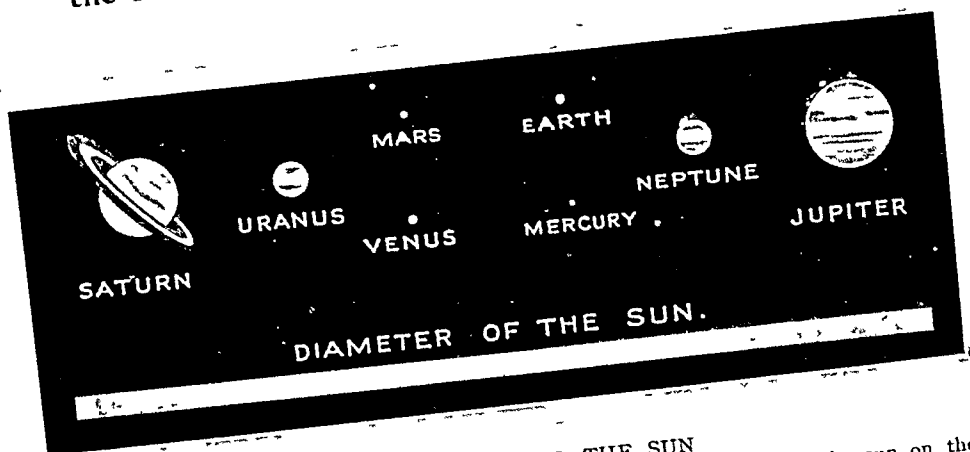
L.E.A.

Ever eager to obtain personal knowledge and see things for himself, Kitchener decided to pay a visit to the scene of Russian activities in the Great War. He left the shores of Scotland in the cruiser *Hampshire* during a violent storm. That night the vessel struck a floating mine and everyone on board perished, with the exception of a dozen men. Kitchener was last seen on the warship's deck, perfectly brave and calm. Our illustration shows the sinking of the cruiser.

The Wonders of the Heavens



The Story of Astronomers and their Work



THE PLANETS AND THE SUN
The comparative sizes of the planets, showing also the huge diameter of the sun on the same scale.

THE SUN AND THE MOON

THE early astronomers believed that the Earth was the centre of the universe and that all the heavenly bodies revolved around it. This was taught by Ptolemy, who was born at Alexandria about A.D. 100, in his great work, the "Almagest."

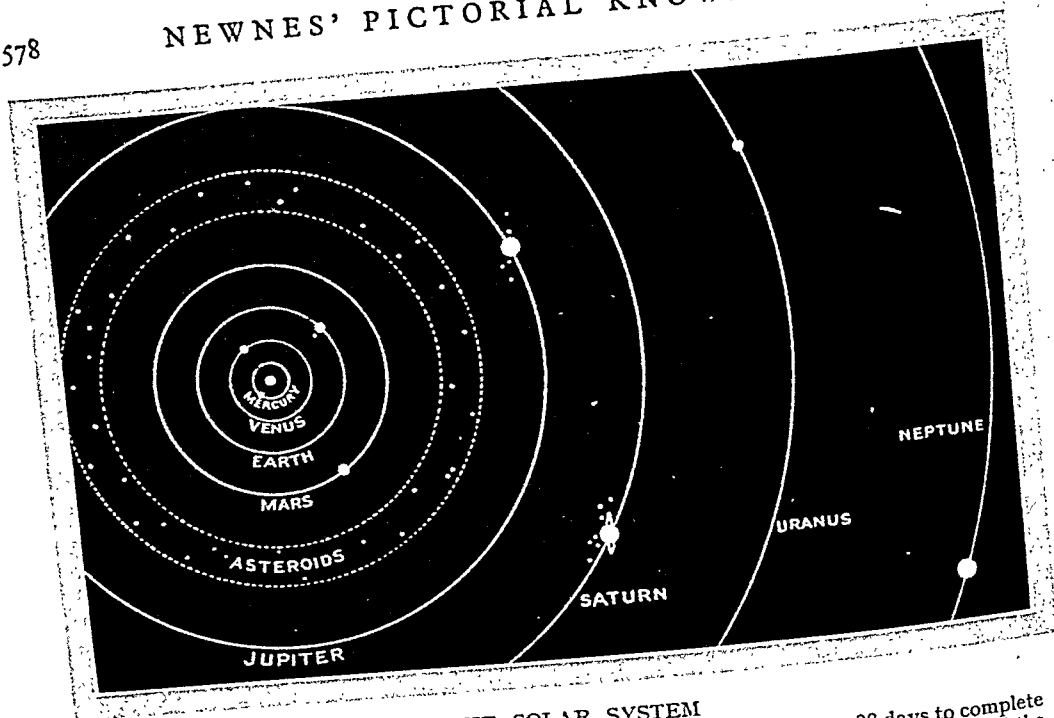
The Copernican Theory.

The Ptolemaic System, as it was called, held for over fourteen centuries after Ptolemy's death, no one having the courage or initiative to suggest an alternative. It was left to Nicholas Copernicus (1473-1543) to show that it held many difficulties. Copernicus realised that the stars must be situated at a tremendous distance and that if they did travel around the Earth, as Ptolemy had taught, then the speed at which they must move, in order to complete a revolution in twenty-four hours, was too great for the theory to be practicable. Copernicus asserted that the daily

movements of the stars could only be accounted for by supposing that the Earth rotated on its axis. He also showed that the movements of the planets could be accounted for by supposing them to revolve around the Sun, each in its own orbit. He believed that Mercury and Venus moved in paths that lay between the Earth and the Sun, and that the paths of the other planets were outside that of the Earth. The Copernican System was later improved by Kepler and it is the accepted theory to-day.

Galileo and Kepler.

It was through supporting the Copernican theory that Galileo came into conflict with the Ecclesiastical authorities. Galileo, who was born in 1564 at Pisa, was the first to apply the telescope to a study of the heavenly bodies. When he saw the four principal satellites of Jupiter revolving around that planet, he realised that he



THE SOLAR SYSTEM

Although in this diagram Mercury looks amazingly close to the Sun, it takes 88 days to complete one journey around the Sun, while the year of Venus, the next planet, is 225 days. Beyond the orbit of the Earth is that of Mars, which revolves around the Sun in 687 days. Beyond Mars are the Asteroids, of which the largest is only about 500 miles in diameter. Giant Jupiter, 1,300 times larger than our Earth, comes next, then Saturn, Uranus and Neptune, the latter revolving at the tremendous distance of 2,792 million miles from the Sun.

was looking at what might be regarded as a model of the Solar System. As a result of his teachings he was summoned (in 1633) before the Inquisition and made to kneel and repeat a declaration that said, in effect, that he was entirely mistaken in his belief that the Earth travelled around the Sun.

After Galileo's death (in 1642) his work was carried on by Kepler, who had promised Galileo that he would continue the investigations that had been made with so much self-sacrifice. Kepler studied the movements of the planets and discovered certain laws relating to their motions. For fifty years after Kepler's discovery the laws remained a complete mystery, and it was left to Newton to show that they were all consequences of a single law of gravitation.

The Solar System.

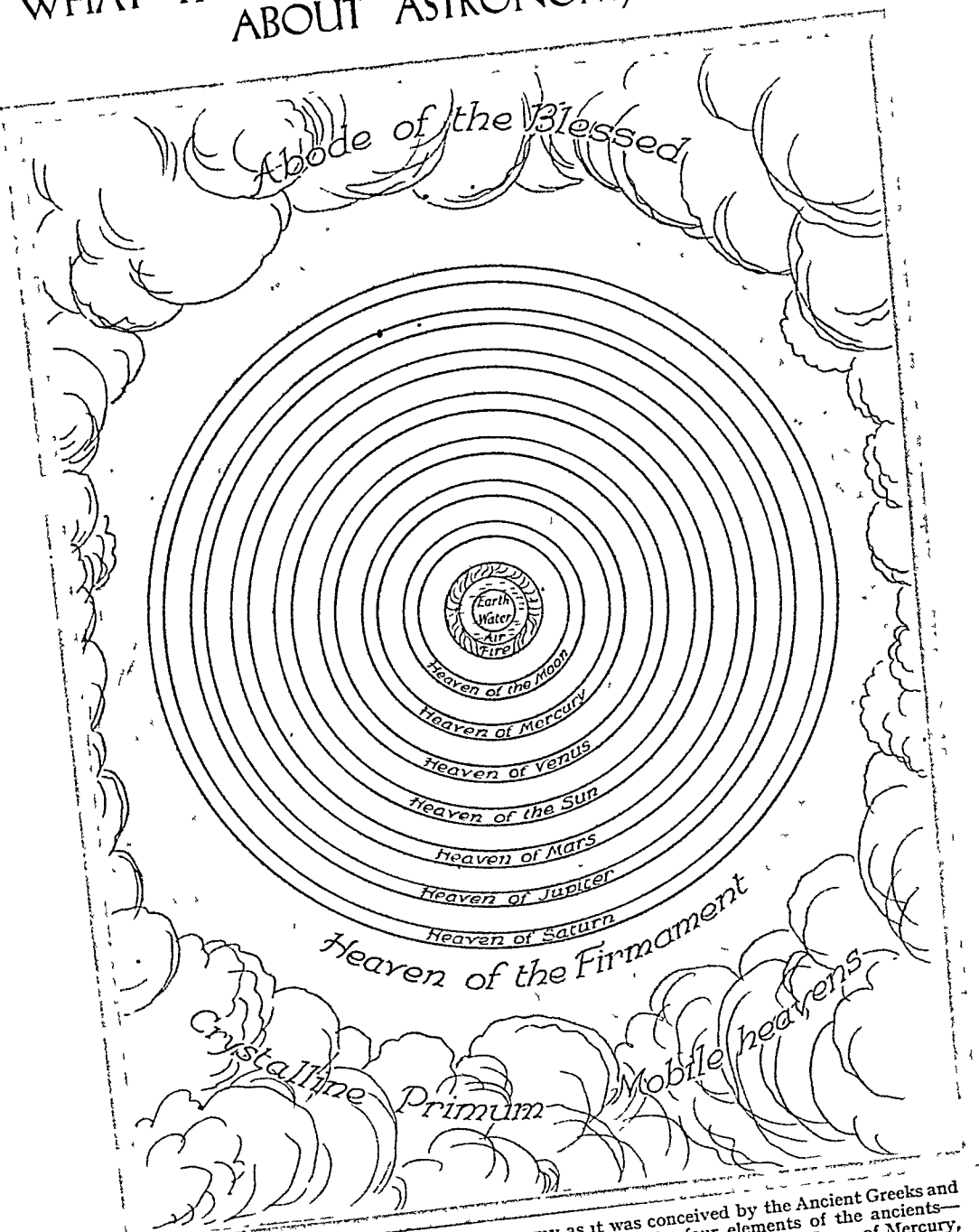
We know to-day that far from the

Earth being the centre of the universe, as Ptolemy believed, it is not even the centre of that particular part of the universe to which it belongs. It is merely a planet—and a comparatively small one at that—circling round the Sun in company with seven* other planets, at least two of which are many hundred times larger than the Earth. The Sun and these eight planets are known as the Solar System, which contains also certain comets, asteroids (or minor planets) and numerous meteors, all of which we shall consider in greater detail later.

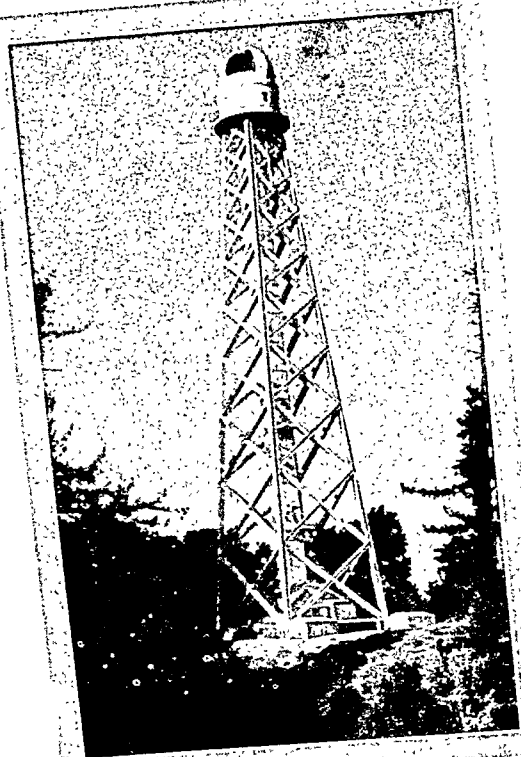
The planets revolve around the Sun in paths that are known as orbits, to which they adhere year in and year

* Since this section was written, another planet has been discovered by the astronomers at Lowell Observatory. This planet revolves in an orbit beyond that of Neptune, and provisionally it has been named Pluto.

WHAT THE ANCIENT GREEKS THOUGHT ABOUT ASTRONOMY



This picture represents the system of Astronomy as it was conceived by the Ancient Greeks and Egyptians. Notice that near the centre of the diagram the four elements of the ancients—Earth, Water, Air and Fire—are indicated. Then come the Heavens of the Moon, of Mercury, of Venus, of the Sun, of Mars, of Jupiter, and of Saturn. Outside these was supposed to be the Heaven of the Firmament in which the stars were fixed. The Moon, the planets and the stars were thought to be embedded in a series of hollow balls of crystal, fitting inside one another and revolving at different speeds.



TOWER TELESCOPE AT MOUNT WILSON
Mount Wilson Observatory was established by the Carnegie Institution. This photograph shows the new tower telescope that gives an image of the Sun $16\frac{1}{2}$ inches in diameter. The Sun is photographed every day with this telescope.

out. The orbits are not perfect circles around the Sun, but are eccentric, so that at certain times the planets are nearer to one another or nearer to the Sun than they are at other times. The planets nearest to the Sun have smaller orbits than those further away, and they revolve around it in shorter periods of time. None of the orbits intersect each other and there seems to be a certain amount of regularity in the placing of the planets, as we shall see when we come to consider the asteroids.

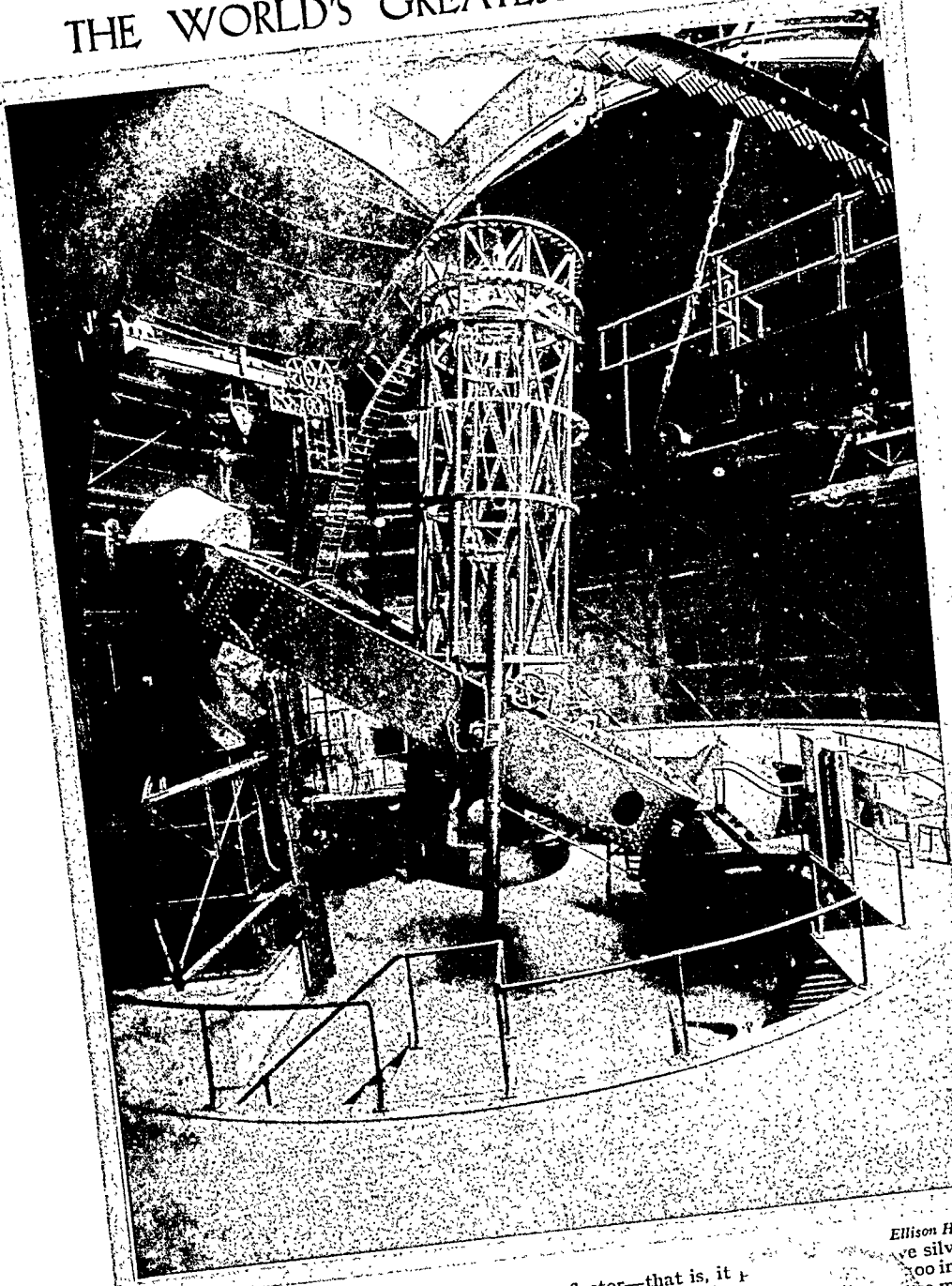


THE DOME FROM THE TOWER

Being 7,000 feet above the sea, Mount Wilson Observatory is above fogs and clouds. This domed building contains the great reflecting telescope that is used for studying and photographing the stars. The dome, which is so constructed that it will revolve, is the largest in existence, being 100 feet across.

Photos: Ellison Hawks.

THE WORLD'S GREATEST TELESCOPE



Mount Wilson's first telescope was a 60-inch reflector—that is, it had a mirror 5 feet in diameter. This was followed by an even larger telescope with a mirror 100 inches in diameter and no less than 12 in thickness. The grinding and polishing of the mirror was done in the Observatory's optical shop at Pasadena, a workshop where the largest of its kind in the world, is moved mechanically at a rate of the movement caused by the rotation of the Earth.

Ellison Hawks.
The silvered
100 inches
the mirror
telescope,
interacts

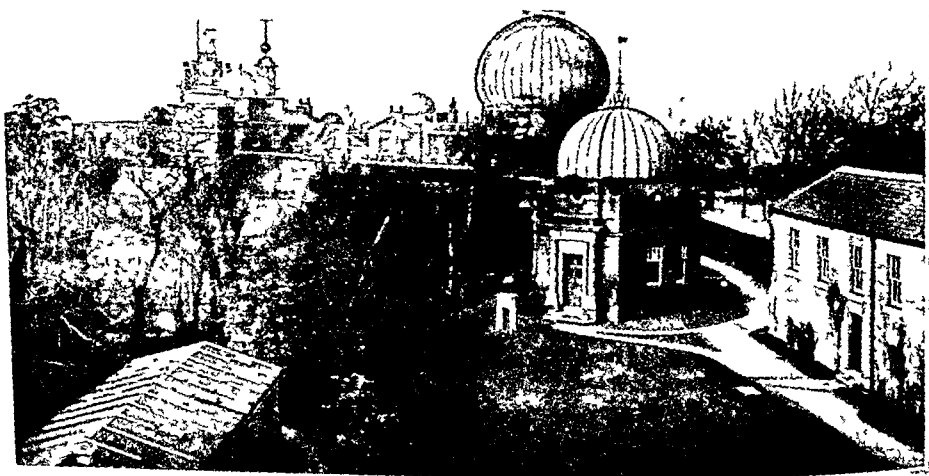
The names of the eight planets in the order of their distance from the Sun are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. We can remember the order of the planets by memorising the following sentence: Men Very Easily Make Jugs Serve Useful Needs. The first letter of each word corresponds with the first letter in the name of each planet, Mercury and Mars being distinguished by the first and second letters, which are the same as in the names of the two planets.

A Model to Scale.

If we desired to make a scale model of the Solar System, we should require a globe 9 ft. in diameter to represent the Sun. On the same scale, the Earth would be represented by a 1 in. ball at a distance of 325 yards, with the

Moon a small pea 20 in. from the Earth. Jupiter would require an 11 in. globe a mile from the globe representing the Sun, with a 5 in. globe $5\frac{1}{2}$ miles distant representing Neptune.

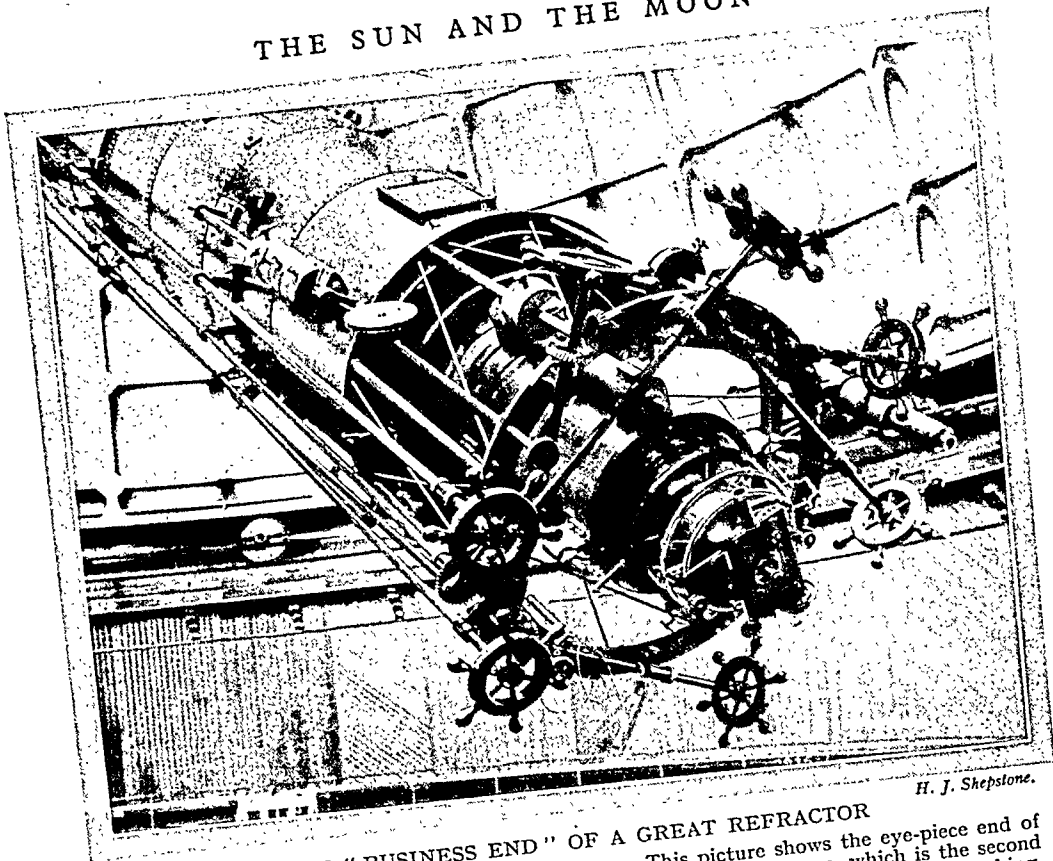
Each planet has some particular characteristic that makes it an object of special interest. Mercury is the smallest planet and the one nearest to the Sun. Venus—the planet nearest in size to the Earth—is sometimes called “the evening star,” and is by far the brightest object in the heavens—with the exception, of course, of the Sun and the Moon. Mars, the fourth planet in order of distance, has peculiar markings that are supposed by some people to be canals made by the inhabitants of this other world. Jupiter is the largest of the planets, has nine satellites and a mysterious Red Spot. Saturn also has nine satellites and a



ENGLAND'S OBSERVATORY

H J Shephstone

Four Royal Observatories exist in the British Dominions—at Greenwich, Edinburgh, Dublin, and the Cape of Good Hope. This photograph shows part of Greenwich Observatory, an observatory with a romantic history. Greenwich is of world-wide importance, for longitude is now universally measured from there, and “Greenwich time” is known far and wide.



H. J. Shepstone.

THE "BUSINESS END" OF A GREAT REFRACTOR

The huge telescope at Mount Wilson is a reflector. This picture shows the eye-piece end of another type of telescope called the refractor. This particular telescope, which is the second largest of its kind, is in the Lick Observatory at Mount Hamilton, California. Roughly speaking, the refractor is built like an opera glass or a sailor's telescope, but no refractor can be as large or as powerful as the largest reflector, owing to the difficulty in making very large object glasses. The largest yet made is 40 inches in diameter and is at the Yerkes Observatory in America.

wonderful ring system. Both Uranus and Neptune are the subject of interesting stories that surround the manner of their discovery, about which we shall read later.

Density and Gravitation.

Not only does the Sun provide light and heat for his family of planets, but he also holds them in their courses by the power known as gravitation. Most of you know how a magnet attracts light objects, and how a large magnet is able to lift larger objects than a small magnet. In a somewhat similar manner the Earth attracts objects to its surface, but in this case the attraction is by gravitation, and not by magnetism. The Earth is not the only

body that attracts, for every body—whether it be the Sun, a planet or a satellite—attracts other bodies to its centre with a power that depends on its size and density.

It is not difficult to understand that the weight of an object on the Earth is really due to the force with which the Earth attracts to its centre. Having learned this, it is easy to realise that as the planets have different masses, the force of gravity on each must vary. To express this in another way, we may say that a certain object with a known weight on the Earth would have a different weight on different planets. For instance, let us suppose a 12-stone man is transported to the Sun. When he arrived there he would find

that he weighed two tons, because everything on the Sun weighs twenty-seven times as much as it does on the Earth! The man's watch would weigh about 6 pounds, and the very act of lifting his arm would seem to him like moving an arm of solid lead. If he were unfortunate enough to fall down, he would not be able to rise, and if he once got into bed he would certainly never be able to get up!

On the other hand, if we could visit the Moon we should find that things weigh only about one-sixth what they weigh on the Earth. It would be a comparatively easy matter for a boy to jump over a house; and a hunter that on the Earth can jump a five-barred gate would leap over a haystack on the Moon with the same amount of exertion. A fielder at a cricket match who can throw in from 100 yards would be able to throw in from 600 yards just as easily on the Moon. At football the players would have to be careful that they did not kick the ball off the field and over the housetops — an extra strong kick would send the ball soaring into the next parish!

HOW FAR IS THE SUN FROM THE EARTH?

WE all know that the Sun is of the greatest importance to us, not only because it controls

the movements of the Earth, but also because we depend upon it for light and heat. Even when the Sun is temporarily absent from the sky, as on a dull day, everyone seems to be affected by the absence of sunlight. Without the energy from the Sun's rays there could be no life on the Earth.

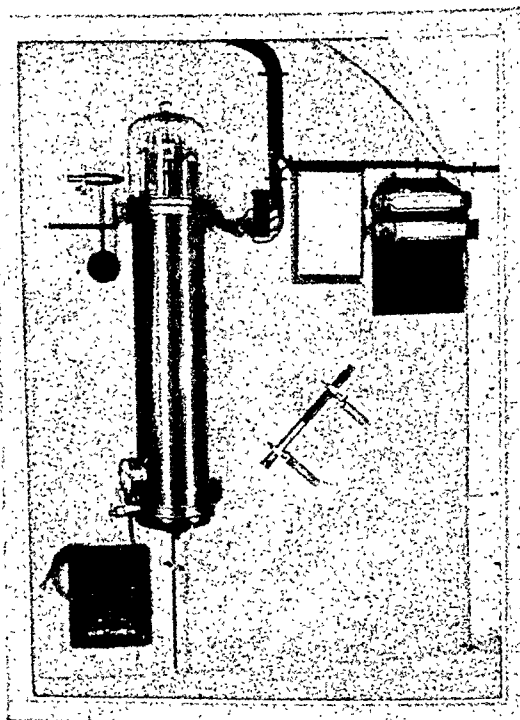
Although the Sun is to us the most important of all the heavenly bodies, it is surprising to think how few people stop to consider its size, distance, or composition. Indeed, this applies not only to the Sun, but to the heavenly bodies in general, in spite of the great

interest they hold for us. In this connection a well-known philosopher has said that humanity is content to live its life much after the style of a race of moles!

Early Calculations.

Mathematicians have devoted an enormous amount of time in the endeavour to measure the Sun's distance, which is one of the most difficult problems of Astronomy. Even at the present time the matter is not definitely settled and adjustments are constantly being made in the final figure.

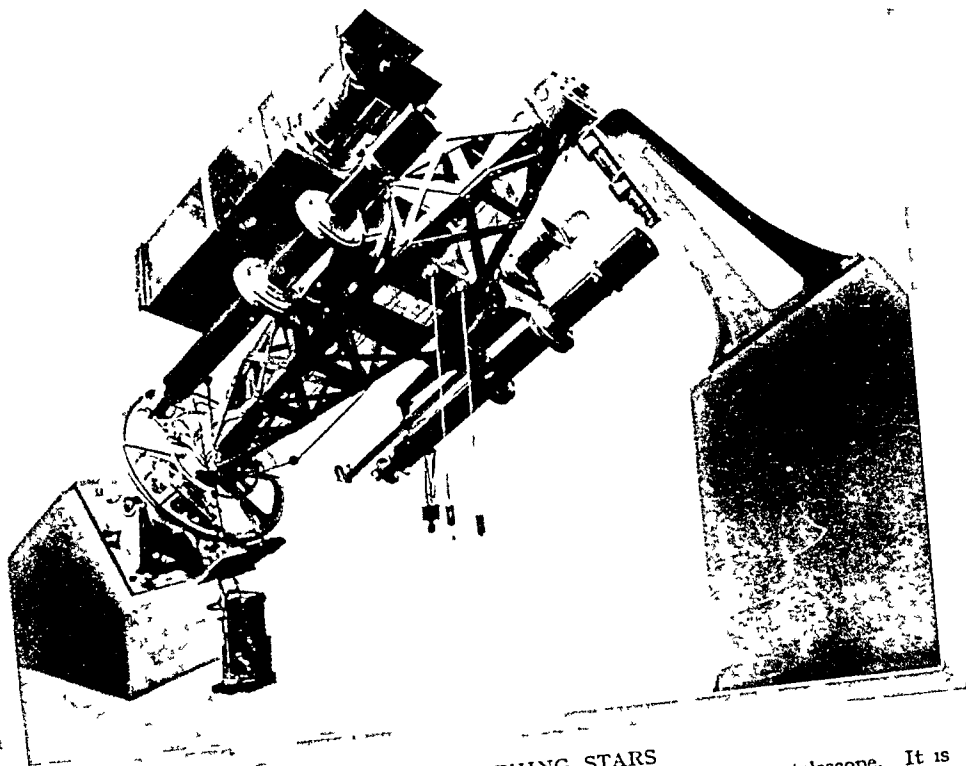
Aristarchus of Samos, who lived in the third century B.C., was one of the first to attempt to solve the problem. He calculated that the distance of the Sun



H. J. Shepstone.

A STAR CLOCK.

This photograph shows the Standard Sidereal (or Star) Clock at Greenwich Observatory. This clock keeps accurate time and is regulated from observations of the stars. The chamber in which this clock is kept is maintained at a uniform temperature.



FOR PHOTOGRAPHING STARS

This strange-looking piece of machinery is a Franklin-Adams astrographic telescope. It is simply a camera combined with a telescope, and is used for charting the stars, for which work it is far more reliable than the human eye. Star-cameras are being used to make a chart of the whole sky.

was some twenty times greater than the distance of the Moon, but his result was about twenty times too little. Other astronomers—including Ptolemy, Copernicus, and Kepler—devoted time to the problem, but their estimates were all incorrect. It was not until 1673 that Cassini obtained a result more in accordance with modern measurements, when he decided that the Sun's distance was 87,000,000 miles. The modern figure for the distance is about 92,900,000—that is a little less than four hundred times the distance of the Moon from the Earth.

A Long Journey !

It is difficult for us to visualise such
N.P.K.

a figure, but we may get some idea of it by the following illustrations. If it were possible to lay a railway from the Earth to the Sun and to set off an express train, it would take that train over two hundred years to reach the Sun, assuming it did not stop day or night. In other words, if King George II. had taken a ticket for the Sun he would not have arrived there yet! According to the experiments of Helmholtz, an appreciable time elapses before a sensation reaches the brain. For instance, if we cut or burn our fingers, it is as though a message has to be transmitted from them to the seat of intelligence. Helmholtz decided that a shock of the kind men-

tioned travels from the injured member to the brain at the rate of about 100 ft. a second.

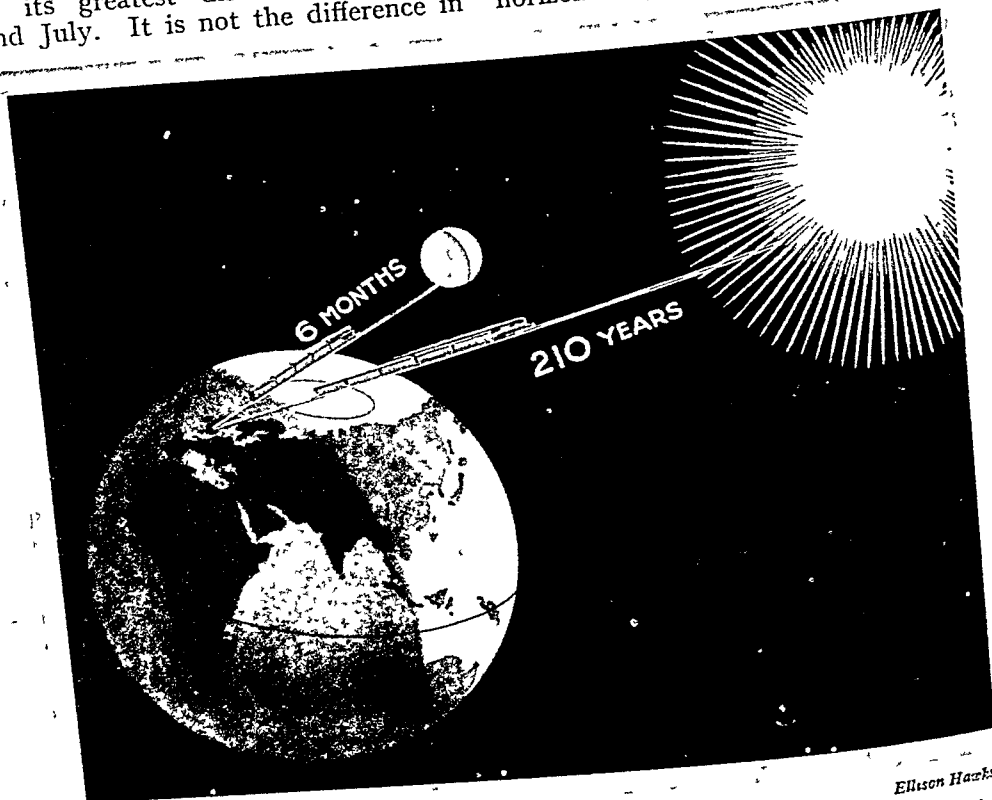
Let us imagine a boy with an arm long enough to enable him to reach to the Sun and that he burned himself when his fingers touched it. Then he would die of old age before the sensation could be communicated to his brain and before he felt any pain!

Why it is Hot in Summer.

It is strange to learn that, to us in the northern hemisphere, the Sun is nearer in the winter than it is in summer! Actually, it is nearest to the Earth about New Year's Day and at its greatest distance about the 2nd July. It is not the difference in

distance, which at the two dates amounts to nearly 3,000,000 miles, that causes the alternation of summer and winter. This is caused by the difference in the tilt of the Earth's axis, which on 21st June is so placed that the North Pole is inclined about $23\frac{1}{2}^{\circ}$ towards the Sun. At this season, the North Pole receives sunlight all day, and the day is longer than the night in the northern hemisphere.

At mid-winter the conditions are reversed and the South Pole has sunshine all day whilst the North Pole has short days and long nights. In addition to receiving sunshine for more than half the day during the summer, the altitude of the Sun above the horizon is greater. This also has an

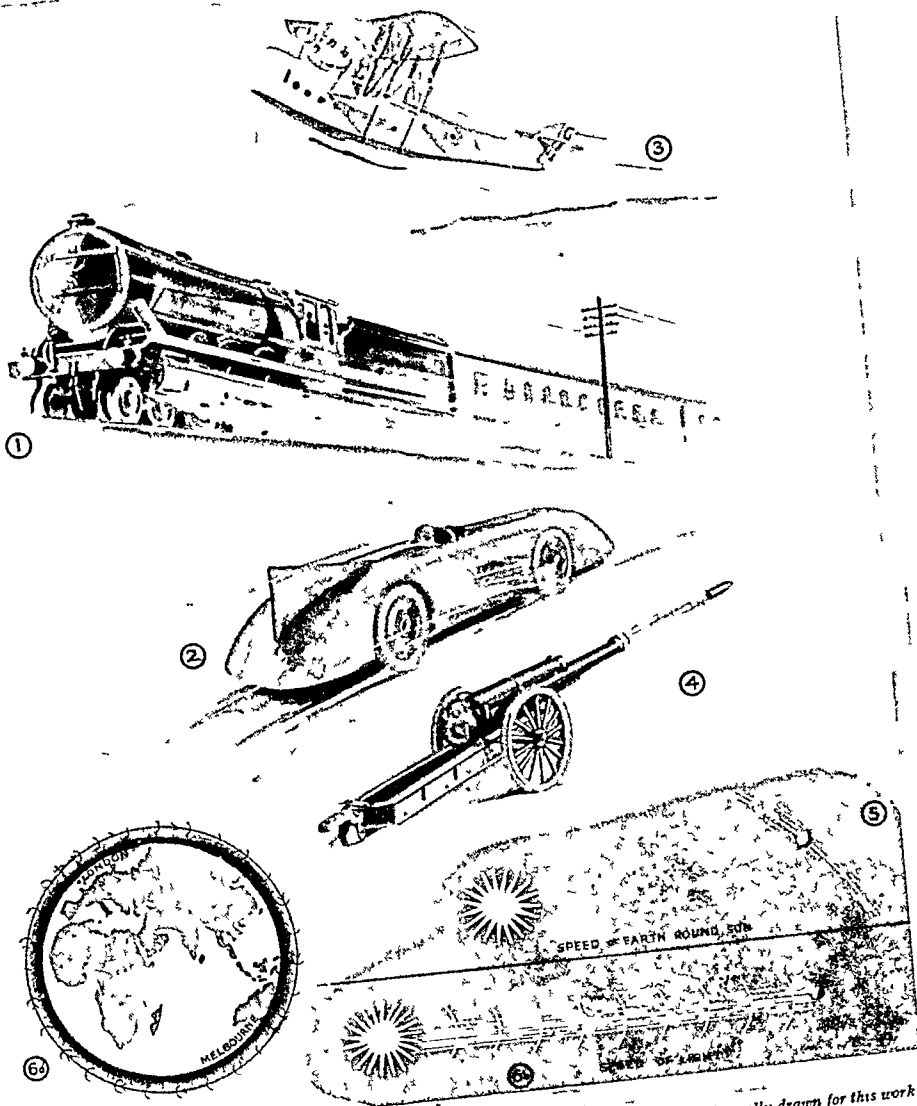


A LONG RAILWAY JOURNEY

It is easy to say that the Moon is 239,000 miles away and that the Sun is nearly 93 million miles distant, but figures mean very little to most people. This picture gives a much better idea of the distances between the Earth and the Moon and Sun. An express train leaving the Earth for the Moon and travelling night and day would reach the Moon in approximately six months, but the same train would require approximately 210 years to reach the Sun.

Elison Harks.

THE WONDERS OF SPEED



Specially drawn for this work

(1) Less than 50 years ago the express train travelling at a mile a minute was the symbol of speed (2) To day a motor car can travel nearly four times as fast—to be exact, 231 miles an hour, while as for the aeroplane (3) you may add another 120 miles an hour and still be on the right side (4) A shell from a cannon is even faster, covering a mile in less than three seconds. (5) Yet all these man-made speeds fade to nothing compared with that of the Earth on its journey around the Sun, which speed amounts to approximately 800,000 miles a day (6a and 6b) The fastest speed of all is that of wireless transmission and that of light. Both travel at the same speed, 186,000 miles a second. A wireless message would travel around the earth in one-seventh of a second, and light takes only nine minutes to reach us from the Sun.

important bearing on the question of summer heat, for the more vertically that the Sun's rays strike the Earth, the greater is the heat that they bring to each square yard of the surface.

ABOUT THE SUN

THE Sun is a hot, self-luminous globe, composed of a mass of highly-heated gases. Its diameter is about 864,100 miles, so that, in comparison with the Earth, it is enormous.

It is difficult for us to imagine the great size of the Sun, but we can obtain some rough idea from the following illustration. If we were to suppose the Sun to be a hollow sphere with the Earth at its centre, the surface of the sphere would be 432,000 miles distant from the Earth. As the Moon is about 239,000 miles from the Earth, we can see that the Sun is large enough easily to contain the path of the Moon. In fact, the Moon's orbit would come only a little more than half way out from the Earth to the surface of the Sun.

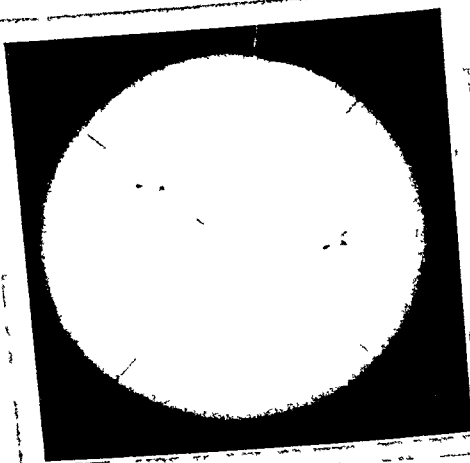
If we wanted to make a "true-to-scale" model of the Sun and the Earth, we should require a globe 2 ft. in diameter for the Sun, and a very small pea ($\frac{1}{8}$ in. in diameter) would represent the Earth. In other words, about 120 planets of the same size as the Earth, placed side by side and each touching, would be required to stretch from one side of the Sun to the other.

The Sun's mass, which is determined by observing its gravitational attraction on the Earth, is 331,950 times that of the Earth. Should we desire to express the Sun's mass in tons, we should have to write down the figure 2 followed by twenty-seven ciphers! The true meaning of such a stupendous number—two octillions of tons—is, of course, too enormous for us even to imagine. It is this huge mass that causes the Sun to have its extraordinarily powerful effect on the planets that circle around it.

Although the Sun is infinitely larger than the Earth, its density is less. The Earth is four times as great in density as is the Sun, a fact that shows the Sun to be more or less of a gaseous nature.

Extreme Brightness of Sunlight.

We all know that sunlight is very bright and that it is dangerous to look at the Sun without protecting our eyes with smoked glass or in some other way. As a matter of fact, sunlight is the most intense light we know, being 146 times more brilliant than limelight. Perhaps the brightest light that we are able to make is that of the electric arc, but even this light appears dark when compared with sunlight. Careful observers have estimated the Sun's light to be at least four times as bright as the electric arc.



THE SUN AND ITS SPOTS

The Sun is about 864,100 miles in diameter and is the centre of our system. The tiny marks you see on his disc are sunspots. The lines crossing the Sun in the photograph are cross wires in the telescope, to help to determine the position of the sunspots.

The Sun's Temperature.

The Sun's heat is no less intense, and it has been estimated that the tem-

THE STORY OF A STAR

BORN AS A MASS OF GAS

WITHIN A FEW YEARS
IT RAPIDLY CONTRACTS
AND GROWS HOTTER

ATOMS SO CLOSELY PACKED
THAT IT CANNOT CONTRACT FURTHER
[INTERIOR NOW LIQUID]

REMAINS THUS OVER
A LONG PERIOD
[STAGE REACHED BY OUR SUN]

ATMOSPHERE
LIQUID
CORE
OF
CLOSELY
PACKED
ATOMS

LIGHT AND HEAT THEN
RAPIDLY DIMINISH

AND IT ENDS AS
A FROZEN BODY

W. B. D. del.

A nebula consists of a huge cloud of gas. The atoms of which the gas is constituted are drawn together by gravity. The centre is molten and has a possible temperature of millions of degrees. This may persist for a very long period, even hundreds of millions of years, and is the stage that has been reached by our Sun. Then the molten globe begins to cool, and becomes what astronomers call a "white dwarf" star. Light and heat rapidly diminish, until, in the end all heat has gone and the one-time star becomes a dark and frozen globe wandering through space.

perature at the Sun's surface amounts to over 12,000° F. Experiments made by Sir John Herschel at the Cape of Good Hope caused him to conclude that the amount of heat received on the Earth's surface would melt an inch thickness of ice in about two hours and thirteen minutes. To express this in another way let us imagine a solid column of ice $2\frac{1}{4}$ miles in diameter and stretching from the Earth to the Sun. If the full power of the Sun's heat could be concentrated on to this gigantic icicle (nearly 93,000,000 miles in length) the ice would dissolve and melt in one second, while another eight seconds would be sufficient to dissipate it into vapour!

How is the Heat and Light Maintained?

Scientists wonder how it is possible for the Sun to maintain its light and

heat, the supply of which seems inexhaustible. Several suggestions have been made in this connection. One theory, which received considerable support some time ago, was that numerous streams of meteors were constantly attracted to the Sun, and by plunging into it caused a renewal of solar activity. Another theory—due to the great physicist Helmholtz—is that the Sun is slowly contracting. Helmholtz calculated that an annual contraction of about 250 ft. would be sufficient to account for the Sun's constant expenditure of heat and light. "But surely," you may say, "astronomers can find out if the Sun is contracting by measuring it?" This is impossible at present, however, for so small is this contraction that something like 10,000 years must elapse before any reduction in the actual diameter of the Sun will become manifest, even if measured with the finest instruments—and telescopes have been in use only for a little over three hundred years!



A SUN STORM (1)

The storms that rage on the Sun's surface are terrific beyond conception. They tear aside the white-hot photosphere, or envelope of highly-heated gas surrounding the Sun, and allow us to see the comparatively cooler regions below (see illustration on next page).

THE SPOTS ON THE SUN

EVEN a small telescope will show spots on the Sun's surface, and occasionally very large spots may be seen by the unaided eye. Before examining the Sun, however, always protect the eyes by looking through a piece of glass that has been smoked in a candle-flame, or by using the dark part of an exposed photographic film.

To understand the cause of sunspots we must first learn something about the nature of the Sun itself. The luminous surface of the Sun that we see is called the "photosphere," a word which comes from the Greek meaning "light-sphere." It is a kind of envelope of

THE SUN AND THE MOON

highly-heated gases surrounding the Sun in a somewhat similar manner to that in which the atmosphere surrounds the Earth. Seen through a low-powered telescope, the photosphere presents a mottled appearance not unlike that of rough drawing paper. When magnified the surface is seen to be made up of tiny markings, called "rice-grains" because they look like rice.

Great storms take place in the photosphere, and the bright surface of the Sun is ruptured and torn apart. Through the great hole that appears, we look into the depths of the Sun, which we see as a black spot. Although these depths appear dark they are not really so, being, in fact, brighter than molten steel and only appearing to be dark by way of contrast with the excessive brilliance of the photosphere.

How Big are Sunspots?

Sunspots vary in size from mere specks to great dark markings sufficiently large to be visible without optical aid. Even the spots that appear to be specks are some 500 miles in diameter, whilst the large ones may be 40,000 or 50,000 miles across. These large spots cover enormous areas, one having been estimated to measure over 3,500,000,000 square miles. One of the largest spots recorded, which was visible in February, 1905, was big enough to allow forty planets, each as large as the Earth, to pass through it without touching its sides. On this basis, assuming the Earth to be represented by a pea, the spot would be as large as a dinner plate.

As a rule, a sunspot is composed of two parts, the dark central part and a lighter fringe surrounding it. The dark part is called the *umbra* and the surrounding fringe the *penumbra*.



E. EDWARDS

A SUN STORM (2)

Here is the same sunspot as it appeared a day later than in the previous illustration. The spike-like markings are flames of incandescent gas. Although they appear small, they are thousands of miles in length. They are constantly changing in appearance.

Sometimes the *penumbra* entirely surrounds the spot, but at other times it may be broken and only be seen around parts of it.

Sunspots are generally circular in shape, but they often take very beautiful and curious forms, with all manner of twists and turns. They change, too, from day to day or even hourly, and what may at first be a circular spot becomes contorted and mis-shapen as time goes on.

Sunspots may break out suddenly, or they may come into being slowly, in which case they are generally preceded by other disturbances. They may last for a matter of hours only, or for weeks—or even months in exceptional cases. In 1840 there was a remarkable spot that persisted for eighteen months. On an average, how-

ever, sunspots last only for from one to four days, during which time they undergo varied changes in appearance. They occur generally in particular latitudes of the Sun, the limit generally being between 5° and 40° north and south of the Sun's equator. Curiously enough, during the past fifty years the spots have been found to be slightly more numerous in the southern hemisphere.

Because sunspots are seen to move each day we know that the Sun revolves on its axis. In this it resembles the Earth, but whereas the Earth revolves in twenty-four hours, the Sun requires twenty-seven days. Thus it is that day by day a spot is seen to move slowly across the face of the Sun for about fourteen days. At the end of that time it is lost to our sight for another fourteen days, whilst it traverses that hemisphere of the Sun that is turned away from the Earth.

The Sunspot Cycle.

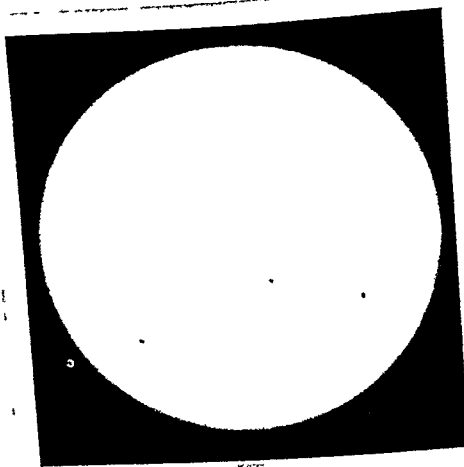
In 1843 an amateur astronomer named Schwabe, who lived at Dessau, noticed that the number of spots varied greatly in different years. As a result of his observations, he discovered that the variation in the numbers was a regular one, increasing and decreasing throughout a period that he fixed at about eleven years. This period is now called the "sunspot cycle" and the time when the spots are most numerous is said to be the maximum, and the time when they are least the minimum.

It is interesting to know that Schwabe's discovery of the sunspot cycle was made with the use of a small telescope. He was a most assiduous observer, and for thirty years he never lost an opportunity of examining the Sun with his telescope. He made over 9,000 observations, in the course of which he recorded 4,700 groups of spots. Schwabe's work is an outstanding example of what an amateur can do even with only a small telescope, for he made discoveries that had eluded professional astronomers, with all their equipment, for two hundred years.

We may here mention, perhaps, that sunspots were first discovered by Galileo when he turned his newly-invented telescope to the Sun over three hundred years ago. The famous astronomer was greatly surprised—and, indeed, perturbed—at what he saw, for up to that time the

Sun had been regarded as a symbol of unblemished purity.

Sunspots have more than an astronomical interest, for at times they affect the Earth's magnetism. At periods of sunspot maximum extraordinarily beautiful displays of the *aurora borealis* are seen—a sure sign of disturbances in terrestrial magnetism. These magnetic storms are sometimes so violent as to change the direction in which



Ellison Hawks

MORE SUN STORMS

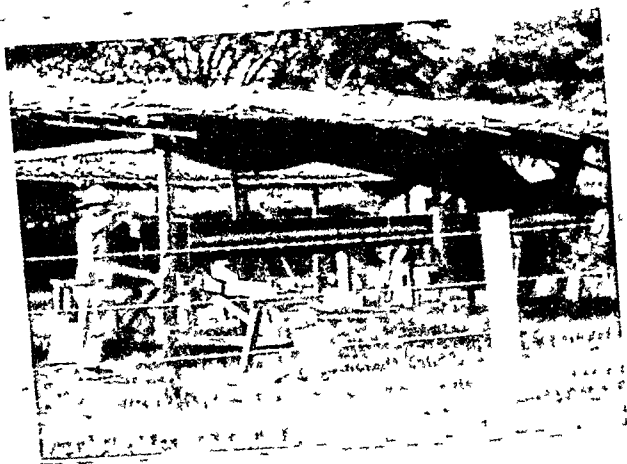
Look carefully at this photograph and notice the tiny black dots. Each is a sunspot of huge dimensions. Sunspots sometimes cause magnetic storms and auroras. Considerable interruption of telegraphic and wireless transmission may result.

ships' compasses point by 3° in as many minutes! They also have affected the telegraph service by interrupting its operation, one of the most remarkable

SUNSPOTS AT CLOSE QUARTERS



Here we are shown what sunspots or Sun storms look like when seen through a powerful telescope. If you compare the size of our Earth, which you can see in the top left-hand corner of the picture, with the spots in the Sun's surface, you will gain some idea of the great size of the spots.



A GIANT CAMERA

In May, 1929, an expedition visited Malaya to observe a total eclipse of the Sun. In this photograph Dr. Jackson, of Greenwich Observatory, is photographing stars visible during the eclipse in order to reply to a query raised by the Einstein theory.

of such instances being that which occurred in 1909.

ECLIPSES OF THE SUN

IN the course of its revolutions around the Earth, the Moon sometimes comes between the Earth and the Sun, thus causing an eclipse. There are at least two eclipses of the Sun every year, and there may be as many as five. These eclipses may be either partial, annular, or total.

A partial eclipse is one in which only part of the Sun is obscured.

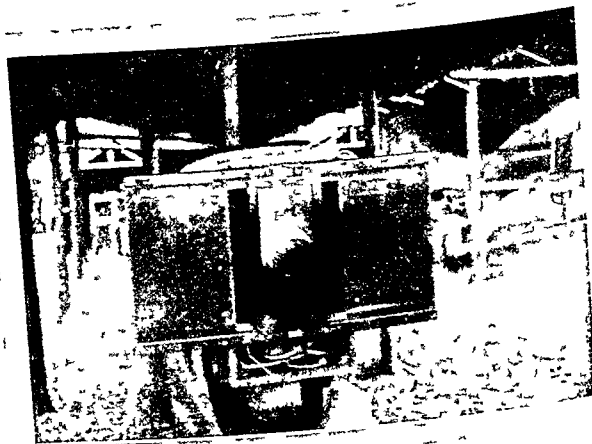
In an annular eclipse nearly the whole of the Sun is covered by the dark body of the Moon, but as the Moon appears to be smaller than the Sun, an uneclipsed ring of sunlight remains.

Total eclipses are by far the most interesting, and astronomers will willingly

journey to the opposite ends of the Earth to observe them. A total eclipse is perhaps the most magnificent and impressive sight that Nature affords us. Little by little the dark body of the Moon encroaches on the bright disc of the Sun, until at last it completely covers it. If the observer is favourably placed he may see the shadow of the Moon sweeping across the land with awe-inspiring speed. The Moon moves in its orbit at a speed of about 2,100 miles an hour, and the shadow it casts travels easterly over the Earth's surface. At every place

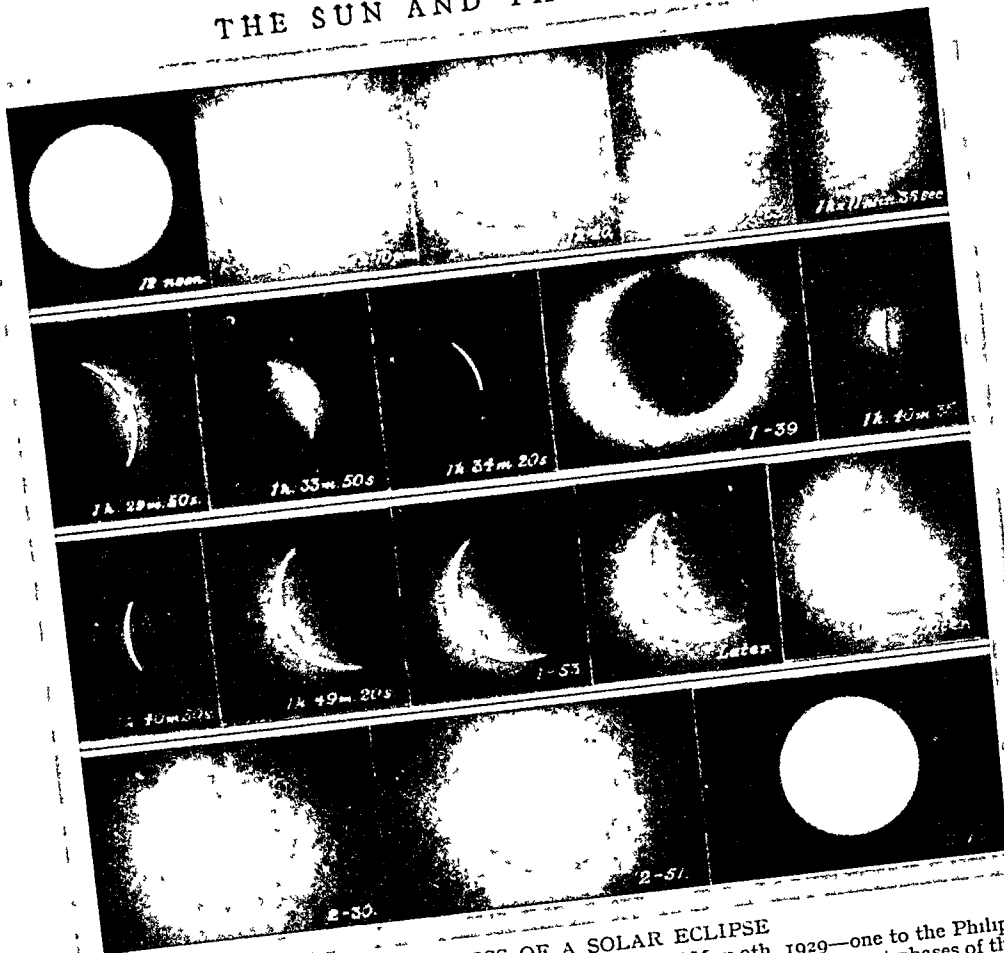
on which this shadow falls there occurs an eclipse of the Sun. The length of the shadow path may be anything up to about 8,000 miles, but the breadth is generally less than 100 miles at the widest part.

In addition to the motion of the Moon we must remember that the



BRINGING DOWN THE SUN

The picture on the screen in this photograph looks like the crescent Moon, but is really the Sun partly eclipsed, as it appeared on the screen of the great 45-foot telescopic camera. This photograph was taken during the eclipse of May, 1929.



THE PROGRESS OF A SOLAR ECLIPSE

Two British parties went East to observe the total eclipse of May 9th, 1929—one to the Philippine Islands, the other to Alor Star in Malaya. These are photographs of different phases of the eclipse taken at Alor Star. The figures under the photographs show the time at which each was taken. Although at times clouds partly hid the Sun, the astronomers succeeded in obtaining (at 1 39) a photograph showing the corona at the moment of totality.

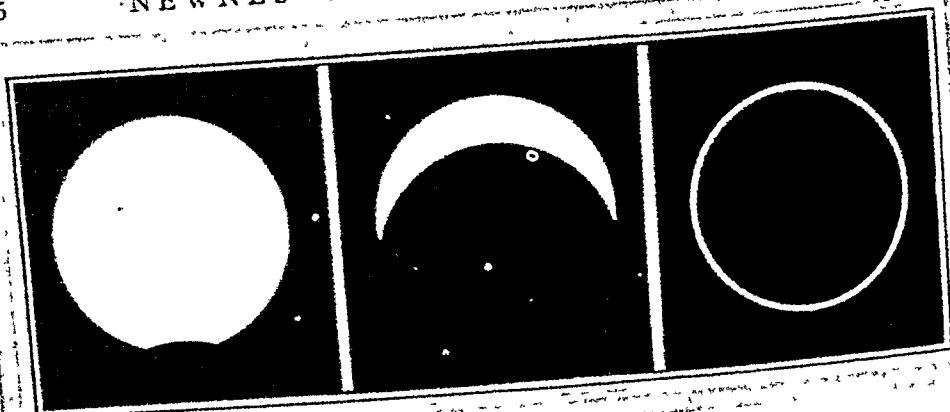
Earth is revolving on its axis at a speed of about 1,040 miles an hour. If we subtract this figure from the Moon's speed we find that the shadow will sweep across the Earth at a rate of about 1,060 miles an hour.

The Corona and the Prominences.

When the Sun is totally eclipsed, the daylight becomes gradually less and a peculiar hush spreads over the land. The wind drops, and an appalling stillness makes it seem almost as though the universe is on the verge of some great catastrophe. When the last thin

crescent of the Sun disappears, the black disc of the Moon is seen surrounded by a wonderful halo of pearly light. This is called the corona, and it changes in form from year to year, varying with the sunspot cycle. At the time of sunspot maximum short bright plumes are seen, but when the sunspots are fewest the corona throws off long streamers. Sometimes these streamers, which consist largely of incandescent gases, stretch for millions of miles into space.

In addition to the corona, there are often seen rose-coloured flames around



THREE FORMS OF SOLAR ECLIPSES

This diagram shows three different forms of eclipse, the first a small partial; the second a large partial; and the third an "annular." In this latter type of eclipse, the whole orb of the Sun is obscured except a narrow ring, for which the Latin name is "annulus." From this word is derived the name "annular."

the edge of the Moon. These projections, which are called the prominences, are really masses of luminous gas in the process of being ejected by the Sun. Prominences often reach a height of hundreds of thousands of miles above the photosphere, and by studying them it has been possible to learn a great deal about the physical constitution of the Sun.

The Mountains of the Moon.

During an eclipse it is noticed that the edge of the Moon is irregular, an appearance that is due to the lunar mountains. This irregular edge accounts also for the fact that when the Moon has almost covered the Sun the last crescent of brightness does not suddenly disappear. Instead, it breaks into a number of tiny points of light called Bailey's Beads, which are seen just before and just after totality. They are caused by the last remnants of sunshine peeping through the spaces between the peaks of the Moon mountains.

Historical Eclipses.

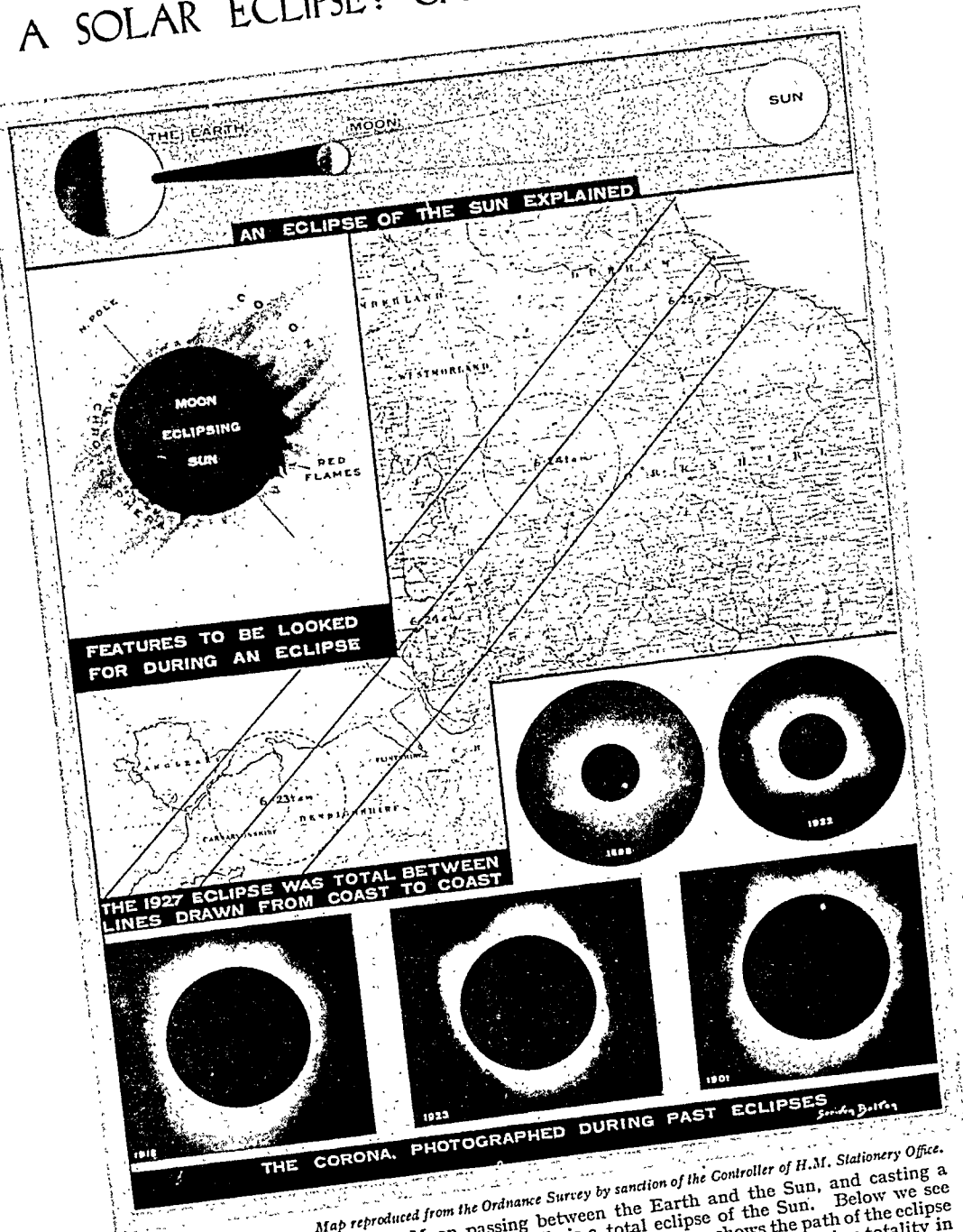
Eclipses of the Sun have been observed from very early times. One of the earliest recorded is mentioned in the Chinese book "Chou-King" in it is expressively written: "On

the first day of the last month of Autumn the Sun and Moon did not meet harmoniously in Fang." It is believed that the eclipse referred to in this record occurred in either 2136 or 2128 B.C.

Both Greek and Latin historians recorded eclipses with particular care, because in those days their occurrence was supposed to foretell some disastrous happening. For instance, an eclipse that took place in 715 B.C. was thought to have been connected with the death of Romulus. In 585 B.C. there was an eclipse that has been of some service in helping historians to fix this year as the date of an important event in history.

Herodotus tells us that during a war between Lydians and the Medes, "just as the battle was growing warm, day was suddenly turned into night. . . . When the Lydians and the Medes observed the change they ceased fighting and were alike anxious to conclude peace." Curiously enough, there is no record of any eclipse having been observed in England until well into the sixth century. There are several records of eclipses in the Anglo-Saxon Chronicle, however, and here again we find that it was customary to associate these unusual events with adverse happenings.

A SOLAR ECLIPSE: CAUSE AND EFFECT



Map reproduced from the Ordnance Survey by sanction of the Controller of H.M. Stationery Office.

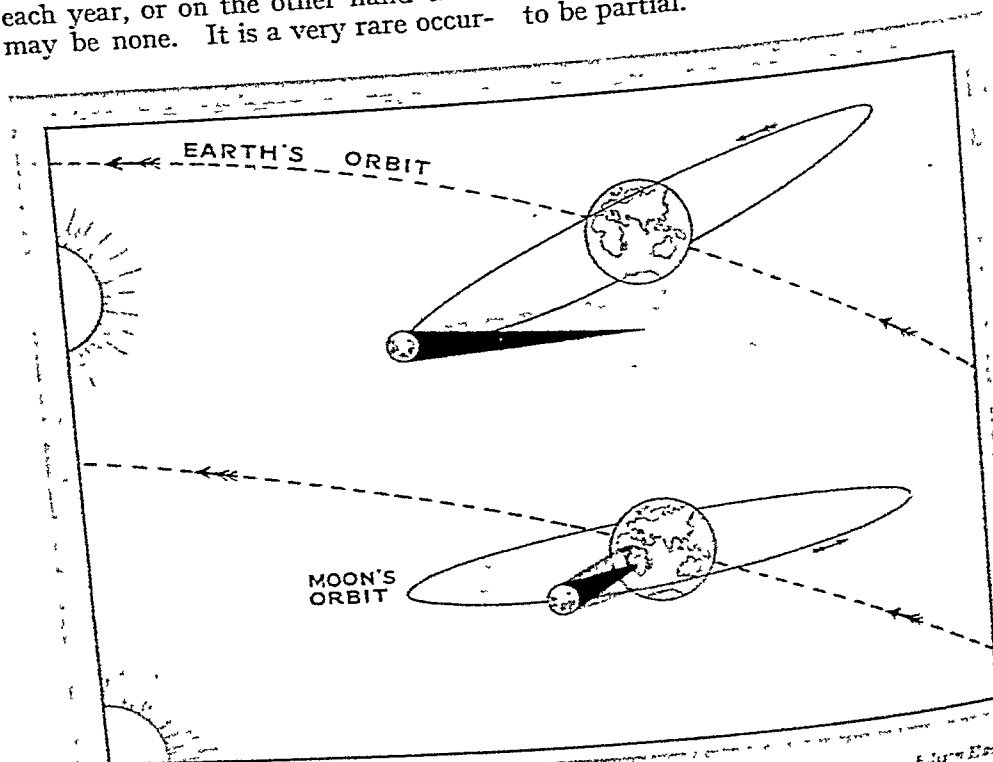
The top illustration shows the Moon passing between the Earth and the Sun, and casting a shadow on the Earth. Where that shadow falls is a total eclipse of the Sun. Below we see where the corona, chromosphere and prominences appear. The map shows the path of the eclipse of 1927 across the north of England. Below are photographs of the corona during totality in five different eclipses of recent times.

ECLIPSES OF THE MOON

AN eclipse of the Moon is caused by our satellite passing through the Earth's shadow. This shadow stretches into space for some 859,000 miles, the length varying according to the distance of the Earth from the Sun. Although the Moon revolves around the Earth every month, it does not always enter the shadow, but passes above or below it. It is only when the Moon is in line, or nearly in line, with the centre of the Earth and the centre of the Sun that an eclipse can take place, and this seldom happens more than twice a year. There may be one or even two eclipses each year, or on the other hand there may be none. It is a very rare occur-

rence if there are three eclipses in one year, but this will occur in 1985, when all the eclipses will be total.

If we examine a shadow we notice that it consists of shadows of two kinds. The central dark part, called the umbra, is surrounded by a half shadow, called the penumbra, a word that comes from the Latin *pene*, "almost," and *umbra*, "a shade." In the same way, the Earth's shadow is divided into umbra and penumbra. Sometimes the Moon does not enter the umbra, but passes only through the penumbra, resulting in what is called a penumbral eclipse. On other occasions the Moon only partly enters the umbra, passing to the north or south of its centre, when the eclipse is said to be partial.

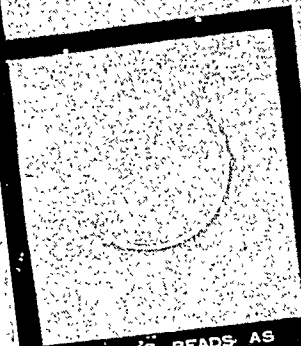


WHY A SOLAR ECLIPSE DOES NOT OCCUR EVERY MONTH

Solar eclipses are caused by the Moon passing between the Earth and the Sun. There is a time in each month when our satellite comes between us and the Sun, but this diagram makes it plain why a solar eclipse does not occur every month. The upper drawing shows one of the comparatively rare cases when the shadow strikes our planet.

THE MOUNTAINS ON THE MOON

MOON'S
RUGGED
EDGE OF
CONTOUR
SUN



BAILEY'S BEADS AS
SEEN WITH THE
NAKED EYE

BAILEY'S BEADS (HIGHLY MAGNIFIED) ARE CAUSED
BY SUNLIGHT PIERCING THE LUNAR VALLEYS



IMAGES OF THE ECLIPSE PROJECTED UPON THE GROUND.
THE INTERSTICES BETWEEN THE LEAVES ACT AS A SORT OF PINHOLE CAMERA

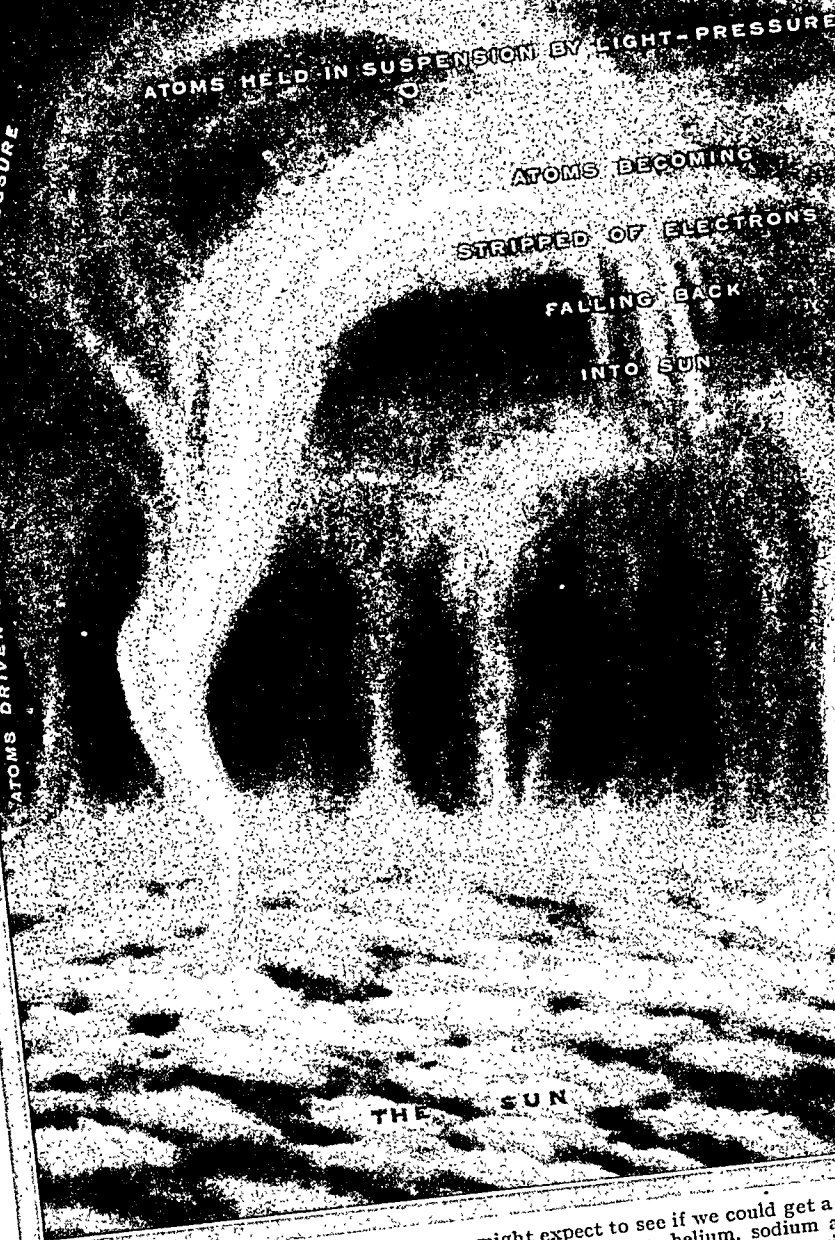
During a total solar eclipse, when the Moon comes between us and the Sun, we see that the edge of our satellite is uneven. This rugged appearance is caused by the mountain ranges of the Moon appearing in profile. Sunlight coming through the mountain valleys causes the interesting phenomena known as "Bailey's Beads." Below is seen a remarkable phenomenon that occurs during a total eclipse.

MAHARAJA EUROPEAN COLLEGE
UDAMPUR (HARIDWAR)
A TOTAL ECLIPSE OF THE SUN



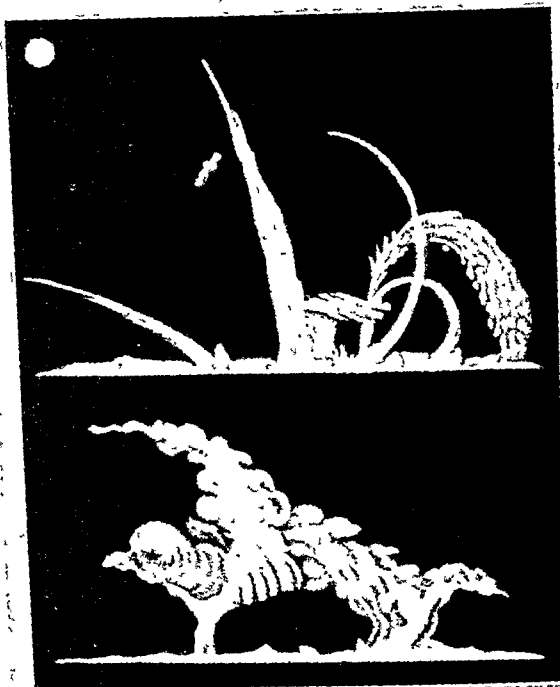
Turn back to page 595 and you will see a series of photographs of the total eclipse of the Sun taken at Alor Star on May 9th, 1929. Here is an enlarged picture at the moment of total eclipse, showing the corona—that is, the atmosphere of flaming gas surrounding the Sun, which extends outwards in great waves for thousands of miles. The wonderful "prominence" seen at the top of the photograph is calculated to have been 180,000 miles long and 120,000 miles high. The corona can only be seen when the Sun is totally eclipsed.

THE SURFACE OF THE SUN



This drawing gives us some idea of what we might expect to see if we could get a "close-up" view of the Sun. From the incandescent masses of hydrogen, helium, sodium and calcium, atoms are driven up to an enormous height by the pressure of light. The atoms rise until the pressure of light and the effect of gravity balance one another. In that neutral area the atoms remain until "ionised," or stripped of their electrons, when they lose the support of light pressure, and fall back into the Sun.

Q Q

*Ellison Hawks.***FANTASTIC FIRE CLOUDS**

The upper picture looks like some strange plant and the lower resembles a very queer bird. Actually these are solar prominences observed during the eclipse of 1872. The prominences in the lower drawing stretched outwards to a distance of 70,000 miles, whilst those in the upper drawing extended 90,000 miles.

The Earth's Shadow.

The shadow cast by the Earth in space is cone-shaped. The duration of an eclipse varies according to the particular part of the shadow cone the Moon is passing through, depending on its distance from the Earth at the time of the eclipse. The Moon may remain totally eclipsed for about an hour and forty minutes whilst it passes through the shadow. It generally takes about two hours for the Moon to pass through the penumbra before entering and after leaving the umbra.

Whilst in the umbra the Moon does not entirely disappear, because the Earth's atmosphere refracts a certain amount of sunlight, bending the rays inwards towards the Moon and causing it to be faintly illuminated. The degree of this illumination varies ac-

cording to the amount of light transmitted through our atmosphere, and this causes the eclipsed Moon to have different appearances. Sometimes it is seen to be dull grey, whilst at others it is of a beautiful copper colour.

During an eclipse of the Moon it is interesting to see that the shadow of the Earth, as it creeps across the Moon, is distinctly curved. This was noticed even by ancient astronomers, two of whom—Manilius and Cleomedes, who lived some two thousand years ago—mentioned the fact to prove that the Earth was round. In those days, of course, telescopes were not known, and from this observation we can realise how keen must have been the sight of the ancient astronomers, and also the close attention that even then was paid to detail.

Named by Chaldeans.

The Chaldean astronomers discovered that eclipses repeat themselves in the same order after an interval of eighteen years, eleven days, eight hours. In this period, which the Chaldeans named the Saros, there occur twenty-nine eclipses of the Moon and forty-one eclipses of the Sun. The fact that eclipses repeat themselves enables us to say, for instance, that the eclipse of 1914 was a return of the eclipses of 1896, 1878, 1860, 1842, and so on. We can also predict that this particular eclipse will occur again in 1932.

The ancient astronomers watched and carefully recorded eclipses of the Moon. As in the case of the earliest record of a solar eclipse, the earliest record of the lunar eclipse was made by the Chinese. It relates to an eclipse that took place in B.C. 1136. Many records of lunar eclipses were left by

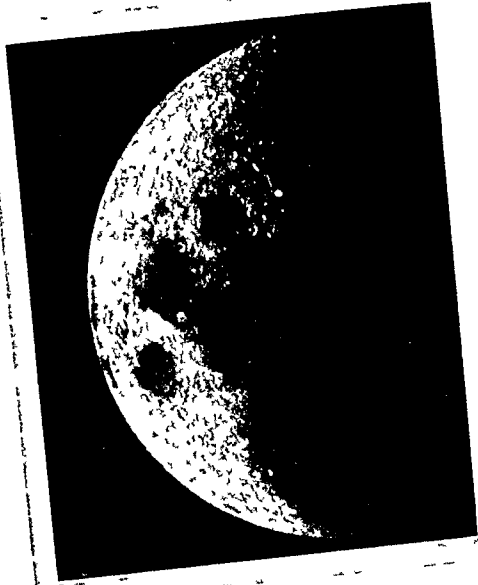
THE SUN AND THE MOON

Ptolemy and other ancient writers, but these eclipses are of little or no historical importance.

That knowledge of Astronomy may be of practical use was demonstrated by Columbus. In 1504 when at Jamaica, he had trouble with the natives who had refused to supply him with food. By predicting an eclipse of the Moon, Columbus gained a great reputation as a prophet. Commanding the respect that is accorded by natives to persons whom they believe to possess supernatural powers, he quickly found that the natives would obey him and he had no further difficulty in obtaining the supplies he required.

THE MOON, THE EARTH'S COMPANION

THE Moon is the Earth's satellite, a word that comes from the Latin, *satelles*, meaning "an attendant." The Moon is so named because it is the



THE NEW MOON

The Moon, as we know, is dead, and has neither air nor water on its surface. This is a photograph of the Moon a few days old, and as it is taken with a telescope it is "upside down" as compared with what the naked eye sees.



ON THE WANE

In this photograph the Moon is just past "full"—that is, when the Sun's light illumines the whole of the side that is turned towards the Earth. Our telescopes tell us much about the surface of our satellite—we even know the height of the lunar mountains.

Earth's attendant in space. It revolves around the Earth in the same way that the Earth revolves around the Sun; and it is held in place by the same force that holds the Earth in its orbit—gravity. The Moon revolves around the Earth in a month, and, indeed, this is how the term month comes to be used.

Distance of the Moon.

The diameter of the Moon is about 2,160 miles, so that it is rather more than a quarter the diameter of the Earth. Its distance varies, and although at certain times it is nearer than at others, its mean distance from the Earth is about 239,000 miles. It may recede to about 253,000 miles or approach to within 221,000 miles. If we were able to lay a railway from the Earth to the Moon, and to set off an express train, it would over six months to reach travelling day and night.



A MOUNTAIN OF THE MOON

This is a picture of one of the greatest lunar craters called Copernicus. The whole surface of the Moon is covered with thousands of craters, some of enormous size. If you stood on the rim of Copernicus you would look down over sheer cliffs thousands of feet high into a vast walled plain.

The changes in the appearance of the Moon from "new" to "full" troubled people in bygone times. Even to-day there are tens of thousands of educated people who could not give a correct explanation of the "phases," as they are called. The Babylonians thought that the Moon had a dark and a bright side, and that throughout the month she turned the bright side towards the Earth until at last the whole of it was seen. Aristotle was the first to give the correct solution of the phases, which are due simply to the different positions from which we view the illuminated portion of the Moon's surface, during the time she is moving round the Earth.

The Moon's Phases.

Like the Earth, the Moon is a dark

body and is composed of similar materials to those that constitute the Earth. She does not possess any illuminating powers of her own, but shines only by reflected light from the Sun. On a clear night when we see the silvery Moon, it is difficult to believe that this is the case. We have only to remember, however, that at the time of a lunar eclipse, when the Moon passes through the Earth's shadow, the Moon no longer presents a bright disc, for then the sunlight is cut off.

When the Moon passes between the Earth and the Sun it is invisible, as all the sunlight falls on the part of her surface that is turned away from us. As she moves round her orbit, however, part of her surface that is visible to us becomes illuminated, and is seen as a crescent "new" Moon. Night by

WAS THIS HOW THE MOON WAS BORN?

FIRST A SPHERE

THEN AN EGG

AFTERWARDS PEAR-SHAPED

THE STALK-END BREAKS OFF

AND FORMS THE MOON

SHAPE TODAY

These pictures show how some scientists think the Moon came into being. At the top is the Earth millions of years ago, still a pasty mass of intensely hot material and spinning at furious speed. It flattens and gets wider at the waist-line. A weakness develops and it bulges. By the speed of its spin the bulge gets longer, becomes a "stalk," and finally breaks off to become the Moon, which assumes the shape of a globe. The Earth itself gradually regains its globular form, and the Pacific Ocean fills the hole left by the tearing away of the Moon.

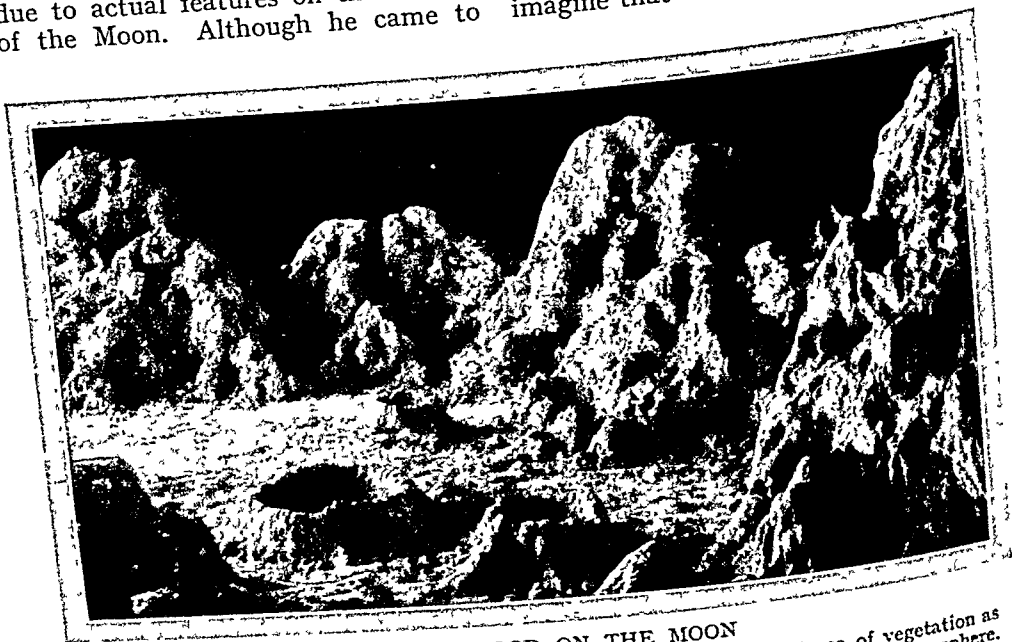
night this illuminated part increases until we get "half" moon. At the time of "full" moon the Earth is in line between the Sun and the Moon, and the whole of that hemisphere turned towards us is illuminated.

The Crater-rings in the Moon.

The Moon is perhaps the most interesting of all the heavenly bodies; even in a small telescope with the naked eye we can see certain dark markings, and these have been likened to faces, figures, and animals. The "Man in the Moon," and the ancient legend that he was put there for gathering sticks on a Sunday, is familiar to everyone. The dusky markings that help to form such pictures were supposed by the ancients to be a reflection of the Earth's markings, for they imagined that the Moon was a great mirror hanging in the heavens. Galileo saw that the markings were due to actual features on the surface of the Moon. Although he came to

the conclusion that the markings must be seas, we now know that there is no water on the Moon. Perhaps these markings may be the beds of ancient seas, but to-day they are bare and desolate plains without water or vegetation.

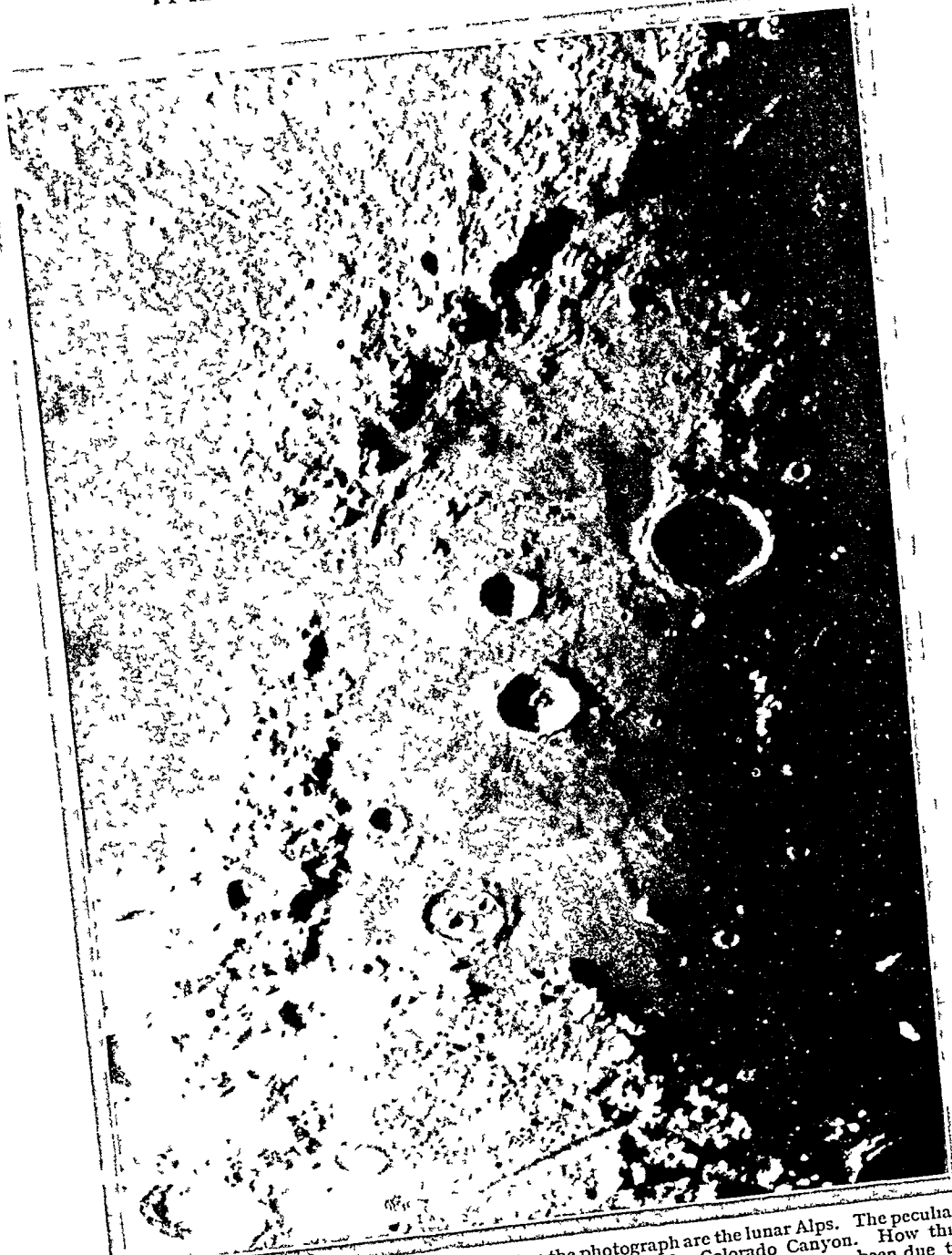
Even with a pair of field glasses we can see numerous circular objects scattered over the Moon's surface. With the telescope these are seen to be crater rings, of which there are many thousands. Each has its name, for the surface of the Moon has been so carefully mapped that we know its details better than we know those of many parts of the Earth. Altogether some 30,000 craters have been mapped, but this number forms only a small part of the whole, it having been estimated that there are something like 200,000 craters to be seen. In observing these crater-rings we must remember that we are obtaining a bird's-eye view of the Moon. If we imagine that we are hovering over the



IF YOU STOOD ON THE MOON

Here we have an artist's conception of the lunar scenery. There is no trace of vegetation as we know it on this dead world, and except possibly in the deepest valleys there is no atmosphere. During the lunar day the heat must be fearful, while during the long night the cold is so great that any water or water-vapour must be turned to snow.

THE VALLEY OF THE ALPS



The mountains in the centre at the lower part of the photograph are the lunar Alps. The peculiar streak marked X is a great valley—perhaps something like the Colorado Canyon. How this valley was formed is a mystery, but some astronomers think its origin may have been due to the fall of a great meteorite that crashed through this mountain range, clearing all before it.

Moon in an aeroplane, and looking down upon its surface, we can understand more clearly what we see.

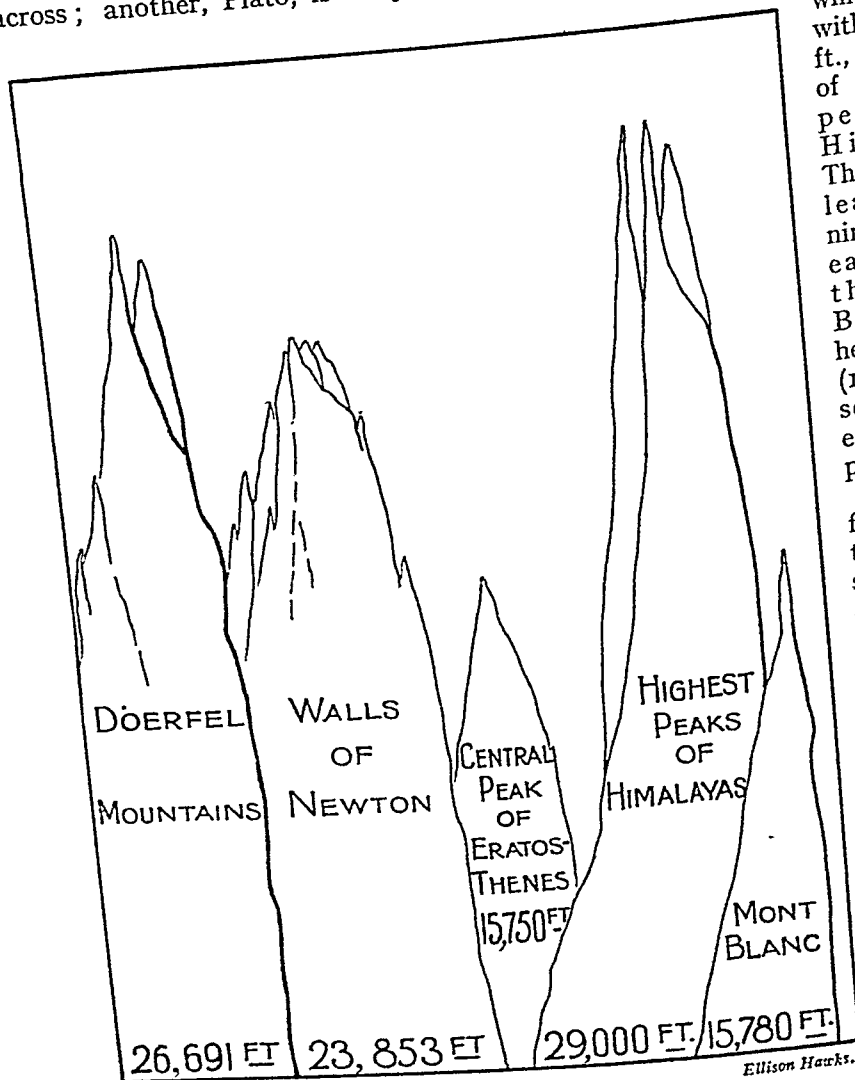
Sunrise in the Lunar Mountains.

Most of the lunar craters have been carefully measured and many are found to be of huge size. One, for instance, named Ptolemæus is 115 miles across; another, Plato, is sixty miles

across. A walled plain named Schickard has a diameter of 133 miles, while Grimaldi and Clavius are even larger, being 138 and 142 miles in diameter respectively. It is interesting to find that in comparison with the size of the Moon the heights of the lunar mountains are relatively far greater than are the mountains of the Earth. For instance, the height of the Döerfel Mountains

is 26,691 ft., which compares with the 29,000 ft., the height of the highest peak in the Himalayas. There are at least thirty-nine mountains each higher than Mont Blanc, the height of which (15,780 ft.) is in several cases easily surpassed.

One of the finest sights that can be seen through a telescope is to watch the sunrise on the lunar mountains. One can observe the light gradually spreading down the peaks into the valleys. Little by little they are illuminated, until at length—at the time of full Moon—the whole surface is bathed in glorious sunlight.

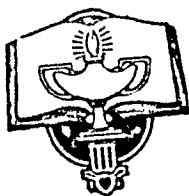


Ellison Hawks.

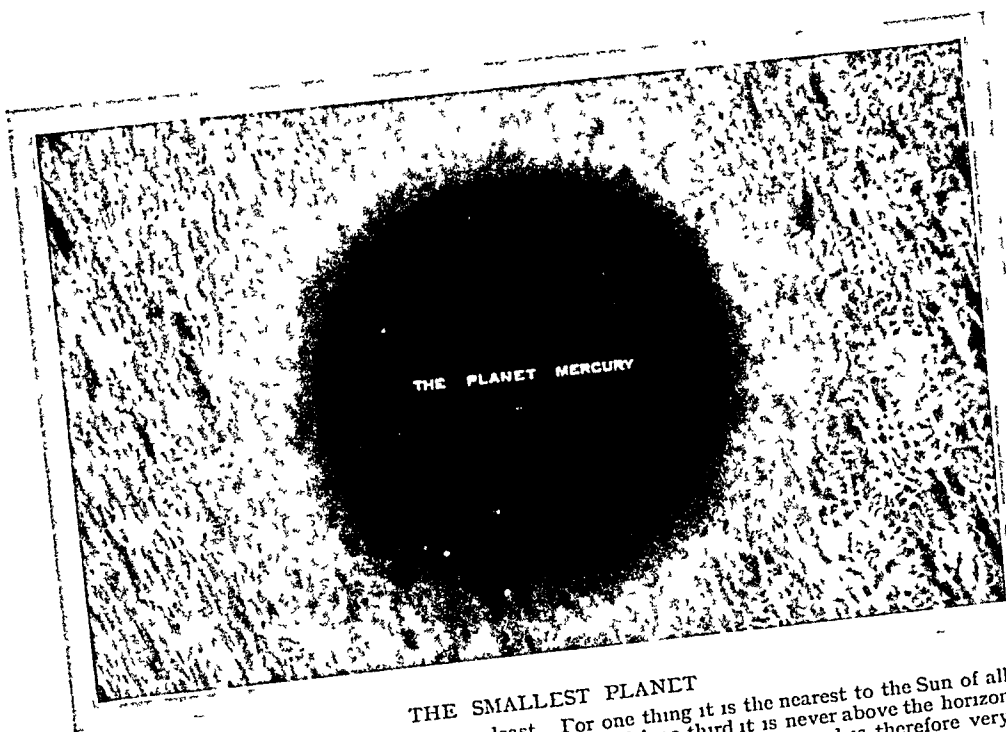
HEIGHTS OF THE LUNAR MOUNTAINS

A comparison between the heights of some of the lunar mountains and those on the Earth. Considering the small size of our satellite, her mountains are comparatively much higher than terrestrial mountains.

The Wonders of The Heavens



The Story of Astronomers and their Work



THE SMALLEST PLANET

Mercury is the planet of which we know least. For one thing it is the nearest to the Sun of all the family of planets, for a second it is very small, and for a third it is never above the horizon for more than two hours after sunset, or the same time before sunrise, and is therefore very difficult to observe. It shines with a rose coloured light, has no spots and no moon. Here you see it crossing the disc of the Sun, or "in transit" as it is called.

PLANETS, COMETS AND METEORS

NOT only is Mercury the smallest planet but, so far as we know, it is the nearest planet to the Sun, receiving from it the greatest amount of light and heat. Some fifty years ago astronomers believed that there might be another planet nearer to the Sun than Mercury, and in 1859 one of them stated that he had actually observed an object that he thought was this new planet. To it the name Vulcan was

given, but, although observers have been keenly on the look out for it, this new planet has never been seen. It seems scarcely likely that such a planet can exist and that it would have remained undetected when hundreds of astronomers scan the Sun every day.

The Greeks and Mercury.

Mercury is a somewhat difficult



THE CLOUDY PLANET

Venus when seen through a telescope shows phases as does our Moon. Its surface is extremely brilliant, being covered with cloud or vapour, which reflects the rays of the Sun and baffles all attempts to discover the nature of the planet's surface.

object to be seen with the naked eye for two reasons—it is so small and it is so near to the Sun. The best time to look for it is either just before sunrise in September or October or just after sunset in March or April. At those times it is at a point in its orbit when we see it at its greatest distance from the Sun.

In spite of the fact that it is so difficult to observe, Mercury was well-known to the ancients. There is a record of its observation in 264 B.C., but even before this the astronomers of Ninevah allude to Mercury in a report that they made to Assurbanipal, King of Assyria.

The Greeks did not know that Mercury could be seen either in the evening sky or in the morning sky, according to its position in its orbit. They thought that the two appearances were those of

different planets and so they had two names for it—"Appolo," when it was a morning star, and "Mercury" when seen in the evening. Although Copernicus knew of the existence of Mercury it is said that he never actually saw it.

In the telescope Mercury is not a very interesting object. It is apparently surrounded by a dense envelope of clouds that reflect the sunlight and prevent us seeing clearly to the surface below. Occasionally shady markings have been seen, however, but generally speaking little is known about the planet. Its mean distance from the Sun is about 35,950,000 miles, but it has a very eccentric orbit and at times may be 7,400,000 nearer or further away. It revolves around the Sun in eighty-eight days and has a diameter of about 3,100 miles.

Phases of Mercury and Venus.

We must mention that in a telescope both Mercury and Venus show phases exactly as the Moon does. They may be seen at quarter, half, or full, and their phases depend entirely on the positions of the planets in their orbits in regard to the Sun and the Earth. When either Mercury or Venus is passing on our side of the Sun, and when the Earth, the planet, and the Sun are in line, the planet is said to be in "inferior conjunction." When the planet is on the other side of the Sun, however, and in line with the Sun and the Earth, it is said to be in "superior conjunction." It is when at this latter part of their orbits that either of the planets would present a circular outline (as does the Moon when "full"), but on these occasions they are invisible, of course, owing to their being behind the Sun.

VENUS—THE EARTH'S "SISTER PLANET"

VENUS is very different from Mercury in many ways. At times she is so brilliant that she may be seen

PLANETS, COMETS AND METEORS

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by daylight, whilst when darkness falls she attracts the attention of everyone. When Venus appears in the evening sky after sunset she is sometimes called "the evening star." Should it so happen that she appears near Christmas time, there are generally "letters to the newspapers" from people who think they have seen the star of Bethlehem again!

The Greeks Knew Venus.

Venus was known and admired in the earliest times and is supposed to be the "Mazzaroth" mentioned in the Book of Job. As in the case of Mercury, the Greeks had two names for Venus—"Phosphorus" for the morning star and "Hesperus" for the evening star. Pythagoras was the first to point out that the morning and evening appearances were not due to two planets but to the same planet in different positions in its orbit.

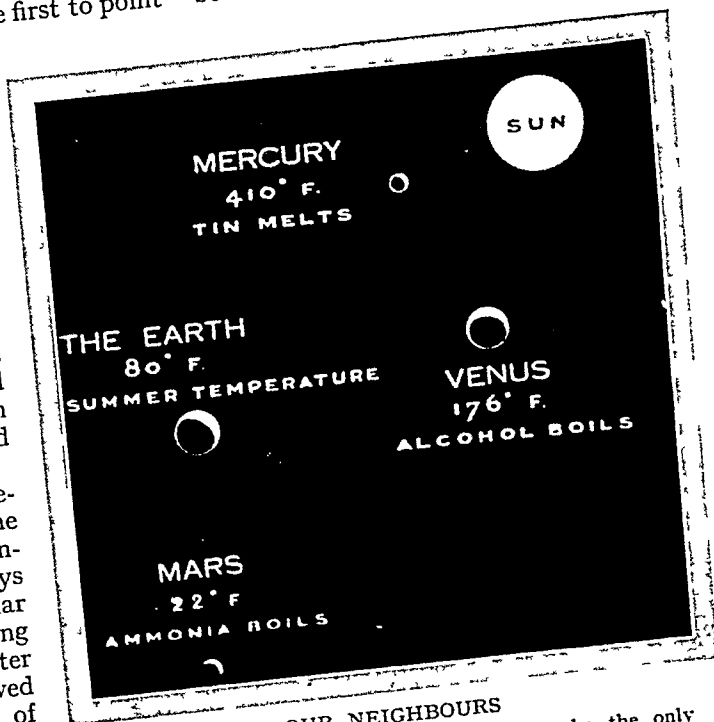
As we have already mentioned when dealing with Mercury, Venus shows herself in phases. Galileo was the first to discover these phases and announced his discovery in an anagram to his friend Kepler.

An anagram is a rearrangement of the letters in a given sentence. In those days this was a popular method of announcing discoveries, for after publication it allowed a certain amount of leisure in which the discovery might be verified before the clue to the interpretation was given. Should anyone else make the same discovery in the mean-

time it only became necessary for the original discoverer to translate his anagram to show that he was first in the field. Thus it came about that Galileo published this peculiar sentence in Latin: *Hæc immatura a me iam frustra leguntur: o.y.* Some months later by moving the letters to their correct places he gave the solution, which was: *Cynthia figuræ æmulatur Mater Amorum*, meaning "Venus imitates the phases of the Moon."

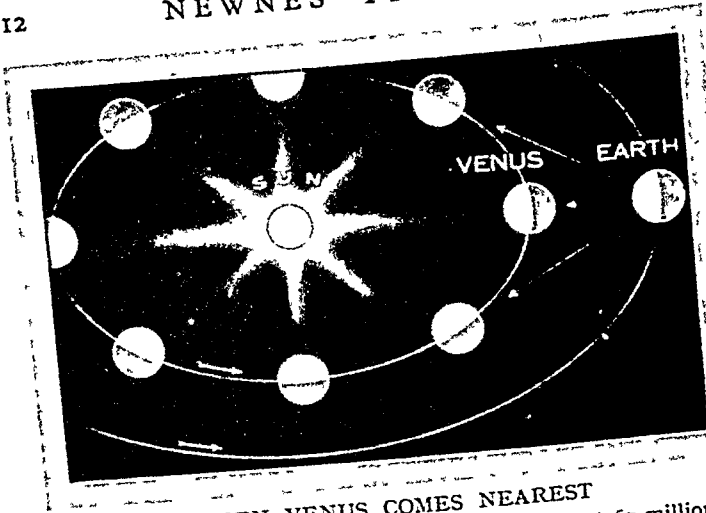
Rotation Period.

In the telescope, Venus is somewhat disappointing, for her great brilliance makes the detection of markings a somewhat difficult matter. Faint and badly defined spots and shadings have been seen, however, and from their



OUR NEIGHBOURS

This diagram suggests that the Earth may be the only planet on which life as we know it is likely to exist. Mercury and Venus are too hot, while Mars, with an average temperature of 10° below freezing point, is too cold. In the case of Mercury and Venus, of course, these conditions may be mitigated to a certain extent by the envelope of clouds that surround them.



WHEN VENUS COMES NEAREST

Venus travels round the Sun at a distance of about 67 million miles, and at times its course brings it within 40 million miles of the Earth. Unfortunately when at its nearest point the planet turns its dark hemisphere towards us, so that we can see nothing of it.

appearance it would seem that Venus possesses high mountains. The absence of definite markings has made it difficult for us to learn how long Venus takes to rotate on her axis. In the seventeenth century Cassini came to the conclusion that the period was about twenty-three hours, and subsequent observers confirmed this period. On the other hand, Schiaparelli—the discoverer of the canals on Mars—decided that Venus required not hours but months to complete a rotation. Other observers have confirmed this opinion. Thus, we come to the conclusion that we do not know for certain what is the planet's rotation period, and we must wait for more definite information.

That Venus has an atmosphere is beyond doubt, but we may conclude that it is less dense than the Earth's atmosphere. Even though there is air on Venus it is by no means certain there will be life there. Under certain conditions life might exist—as it might even on Mercury—for the greater heat owing to its nearness to the Sun might, to a certain extent be tempered by a thick envelope of clouds. On this point we cannot speak with certainty.

If there are any people on Venus they should be able to see the Earth, which will appear to them to be far brighter than Venus appears to us. They will see, too, our Moon close to the Earth and passing through her phases—a beautiful and interesting spectacle.

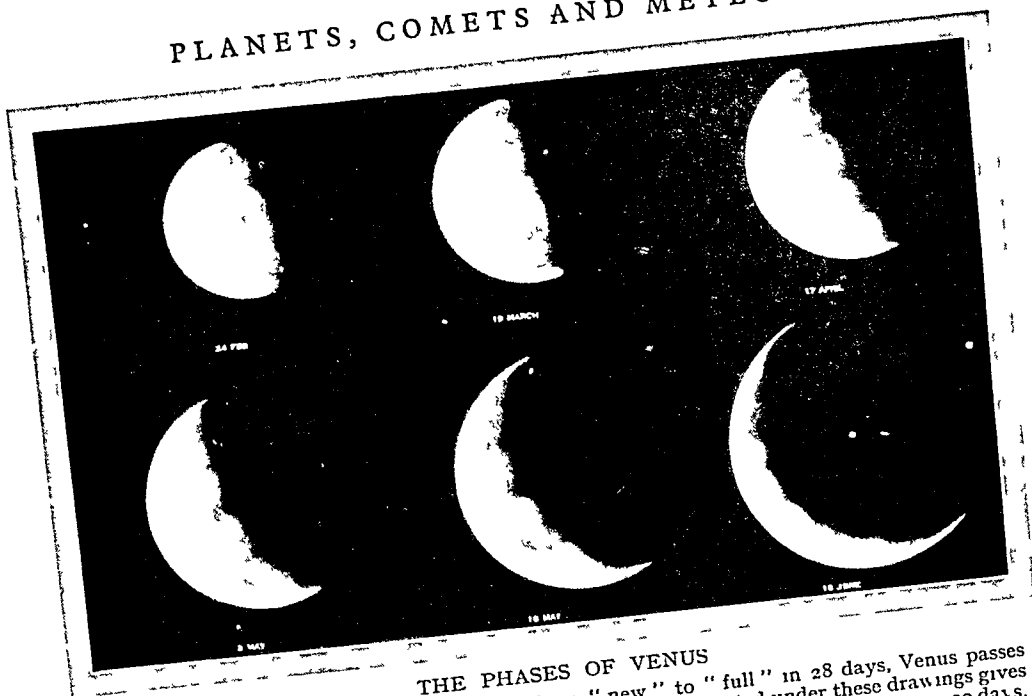
The distance of Venus from the Sun is about 67,000,000 miles, and she receives almost double the amount of heat and light that the Earth does. She revolves

around the Sun in 225 days, or nearly $7\frac{1}{2}$ months, and her diameter is about 7,700 miles. She is therefore only a little less in size than the Earth, and for this reason is sometimes spoken of as being the Earth's "sister planet."



VENUS AND THE EARTH COMPARED

There is very little difference in size between Venus and the Earth, for the diameter of Venus is 7,700 miles. In shape the difference is considerable, however, for the Earth is flattened at the poles, whilst Venus shows no flattening and is a perfect sphere.



THE PHASES OF VENUS

While the Moon passes through its phases from "new" to "full" in 28 days, Venus passes through her phases much more slowly. A study of the dates printed under these drawings gives proof of this. The spectroscope shows us that the cloud surface of Venus rotates once in 20 days, but the clouds are 80 miles thick and it is probable that the planet itself revolves more rapidly

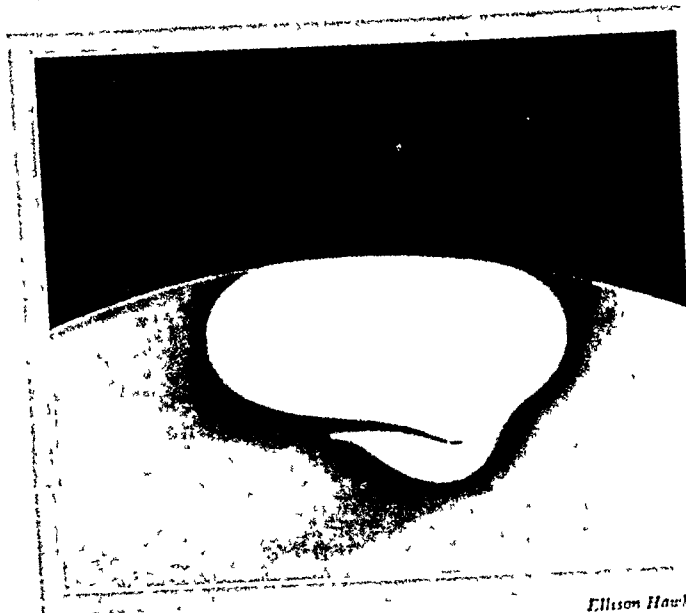
Transits of Venus.

Sometimes Mercury or Venus may pass directly between the Earth and the Sun, an occurrence that is known as a transit. On such an occasion the planet is seen as a round black spot against the Sun's disc. Transits of Venus are more rare than those of Mercury, and they are of greater importance. In 1679 Halley pointed out that observations of the transits of 1761 and 1769 could be used to calculate the distance of the Sun. The transit of 1761 was observed from different parts of the world, but certain discrepancies in the observations caused the results to be unsatisfactory. The observations of the 1769 transit were of great value, however, the event being observed by several expeditions, one of which was despatched by George the Third at his own expense to Hayti. The next transit of Venus will not take place until the year 2004.

MARS, THE "RUDDY PLANET"

MARS, the fourth planet in order of distance from the Sun, is 4,215 miles in diameter. It completes a revolution of the Sun in 687 days, and rotates on its axis in twenty-four hours thirty-seven minutes. Consequently the seasons on Mars are about twice as long as on the Earth, but day and night on the planet are only a little longer.

Although Galileo examined Mars with his telescope he was unable to discover anything of importance. A Dutch astronomer named Huyghens who lived in the seventeenth century, was more fortunate, however, and saw dark markings. Since that time Mars has been closely studied by many astronomers, and so complete a knowledge has been gained of the planet's surface markings that maps and even globes have been constructed with each Martian feature depicted and named thereon.



Ellison Hawks.

ICE AND SNOW AT THE POLES OF MARS

Here we see the South Polar cap, surrounded by a dark ring of water from the melting snows. (See illustration on next page.)

The Polar Caps of Mars.

Even to the naked eye Mars appears to shine with a ruddy hue, and the telescope shows that this is due to the fact that as a whole the planet is orange-coloured. It is as though we were looking at a great area of golden sand, and this is believed to be actually the case. At the poles there are patches of brilliant white, which do not remain of a uniform size. They increase as spring advances on the planet, and decrease until by the end of the Martian summer they have almost disappeared. These polar caps must be vast fields of ice and snow surrounding the polar regions of Mars and resembling the Arctic and Antarctic regions on the Earth.

We have already mentioned certain dark markings, and at one time these were thought to be oceans or seas. It is now certain that they are not water, however, but that they are probably areas of vegetation, which spring into life when the water from the melting polar caps reaches them.

Canals on Mars.

In 1877 Schiaparelli of Milan announced that he had discovered a network of fine lines, some of which extended for hundreds of miles across the planet's surface. Although he called these lines "canals," Schiaparelli had no thought that they might be canals in the strict sense of the word—that is to say, artificial waterways made by intelligent beings. The peculiar markings have been seen by many other observers, and some have noticed that at places where they cross each other there are generally dark

round spots, which are called "oases."

The late Professor Lowell, who erected an observatory in Arizona specially to study Mars, advanced a theory that the "canals" are actually artificial waterways constructed by the inhabitants of Mars. He pointed out that Mars has a very thin atmosphere and that clouds are rarely seen.

The absence of clouds means that there would be no rain, and no rain means no rivers. The question of water supply on Mars therefore is a very different thing from what it is on the Earth. If there is intelligent life there, Lowell argued, it is reasonable to suppose that the inhabitants exist on the produce of the land. Now, the only water available on the planet is locked up in the ice and snow of the polar caps. When the Martian summer advances and the ice and snow melts, the inhabitants bring the water from the polar regions to the desert areas by means of the canals that they have constructed.

The dark spots at the junction of the canals are believed to be

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centres of habitation, their dark appearance being caused by the growth of vegetation watered by the canals. Whether or not Lowell is right we do not know—it remains to be seen what the future will teach us.

The Satellites of Mars.

Mars has two small satellites named Deimos and Phobos, which are the mythological names of the horses that drew the chariot of Mars. These two moons are very small, Deimos being only about 10 and Phobos about 35 miles in diameter. Their orbits are comparatively close to Mars, that of Deimos being 14,600 miles, and Phobos 5,826 miles distant from the planet. Deimos completes a revolution of Mars in 30 hours 18 minutes, whilst Phobos moves more rapidly requiring only 7 hours and 39 minutes to complete a revolution.

In the case of Phobos we have a curious state of affairs, for the satellite revolves around Mars in less time than it takes the planet to complete a revolution on its axis. As we have already seen, Mars requires 24 hours 37 minutes to complete one revolution, so that Phobos revolves around it more than three times in one Martian day! As it travels more quickly than the planet rotates, it will not rise in the east and set in the west as our Moon does, but will rise in the west and cross the heavens $2\frac{1}{2}$ times in a Martian day, setting each time in the east!

THE MINOR PLANETS

MERCURY, Venus, the Earth and Mars are sometimes called the "inferior planets," and the four planets be-

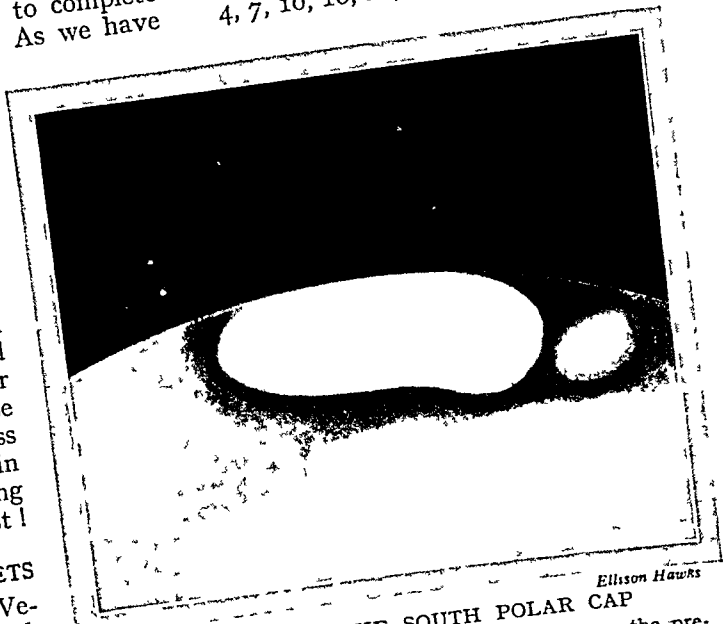
yond Mars—about which we shall read later—are called the "superior planets." The ancients knew only six planets, for the seventh and eighth were not discovered until some time after the telescope had been invented.

A Curious "Law" of Progression.

Between the orbits of Mars and Jupiter is a space in which there are a large number of interesting little bodies—the Asteroids, or "star-like" planets. The discovery of these asteroids came about in a remarkable manner. In 1772, a German astronomer named Bode noticed that a curious relationship existed between certain figures and the distances of the planets from the Sun, and this relationship is now called "Bode's Law." If we write down certain figures of which each but the first and second is double that of the number preceding it, we get:

0, 3, 6, 12, 24, 48, 96, 192, 384;
adding 4 to each number gives:

4, 7, 10, 16, 28, 52, 100, 196, 388.



Ellison Hawks

CHANGES IN THE SOUTH POLAR CAP

This drawing was made some weeks after the one on the previous page, and in the interval a considerable part of the snow field has melted



THE EARTH AS SEEN FROM VENUS

If there are people on Venus they may occasionally catch a glimpse of Earth through the surrounding mists. This picture shows how our planet may look if seen from Venus. The Earth would be a specially brilliant object in the night sky of Venus, because that planet has no moon. The rings around the Earth are of atmospheric origin and are caused by refraction.

It is strange to find that these latter numbers represent fairly accurately the distances of the planets from the Sun, expressed in ratio of the Earth's orbit. This is shown more clearly by the following table :

Planet.	True Distance from the Sun.	Distance as shown by "Bode's law."
*Mercury	3.87	4
*Venus	7.23	7
*Earth	10.00	10
*Mars	15.23	16
Asteroids	27.66	28
*Jupiter	52.03	52
*Saturn	95.39	100
Uranus	191.83	196
Neptune	300.37	388

At the time Bode made his interesting

discovery, only the planets marked * in the above table were known, but the discovery of Uranus in 1781, at a distance that corresponded to that shown by the "law," greatly strengthened belief in it. The blank between the orbits of Mars and Jupiter was noticed, and as Kepler had predicted that some small planets would be found in this zone, astronomers began seriously to consider the matter. In 1800, Baron von Zach called a conference at Lilienthal and each astronomer present agreed to combine with others in examining the sky, in the attempt to discover these small planets that were believed to exist. The astronomers named themselves the "celestial police," and they "patrolled their beats" each night with the aid of their telescopes.

he "Celestial Police" make Discoveries.

At Palermo, in Sicily, is an observatory, the director of which at the time was Piazzi. He had actually been appointed one of the "celestial police," but he did not know the arrangements that had been made in this connection by the conference. Piazzi was engaged in making a catalogue of stars, and on the first night of the nineteenth century (1st January, 1801) he charted the position of what he took to be a star. On several evenings he noted this object, but, much to his surprise, he saw that it was moving among the stars. At first he thought that the new body was a comet, but soon it became evident to him that a new planet had been found. When his observations were completed it was seen that this new planet revolved in an orbit that lay between Mars and Jupiter, and it therefore filled the blank space where—according to Bode—a planet should be found.

The new planet was named Ceres, after the patron goddess of Sicily. Although a very small object—it is only about 447 miles in diameter—it fulfilled the necessary conditions and once more the Solar System was regarded as being complete.

Shortly afterwards, however, Olbers, a German astronomer and another member of the "celestial police," discovered (in 1802) another small object. This turned out to be a second planet, and to it the name of Pallas was given. The discovery of this second planet caused much astonishment in the scientific world, and many theories were put forward to account for the two tiny planets. The "celestial police" became more enthusiastic than ever, thinking—doubtless—that if there were two of these tiny planets, there might easily be more. They "patrolled" the heavens more keenly than ever, and it was not long before their vigilance was rewarded, for two more planets



COMPARATIVE SIZES OF THE EARTH AND MARS

Mars is 4,215 miles in diameter, and is therefore approximately half the diameter of the Earth. It rotates on its axis in 24 hours 37 minutes and completes a revolution of the Sun in 687 days

were discovered—one in 1804 and the other in 1807.

It was suggested that these four planets were fragments of some larger planet that had at some remote date been blown to pieces. For many years this theory held the field, and although at one time it was supposed to be impossible, it has been revived in recent years, as we shall mention later.

The Amazing Number of Asteroids.

Although the search was still carried on after the discovery of the fourth planet, it was abandoned in 1816, for no more discoveries had been made. Fourteen years later, however, a German amateur commenced a search, which he continued for fifteen years, when his patience was rewarded by the discovery (in 1845) of a fifth planet. Eighteen months later he found another, and two more were found in the same year (1847) by an English astronomer. Since that time there has been a continual record of discoveries, not a year having passed without from one to a hundred having

been discovered. Now, over 1,000 of these minor planets have been recorded and their orbits calculated. Over 500 more have been discovered but lost again because not enough observations could be made to enable their orbits to be calculated.

The earlier minor planets were given names, but when it was evident that there was a large number of them, it became the practice to distinguish them by a letter of the alphabet. When all the letters were used up, the alphabet was used again as a combination of two letters, something after the style of motor car registration in our large cities. Thus, the members of the first series were known as A, B, C, etc., the second were AA, AB, AC, etc. Then came BA, BB, BC, followed by CA, CB, CC, etc., and so on.

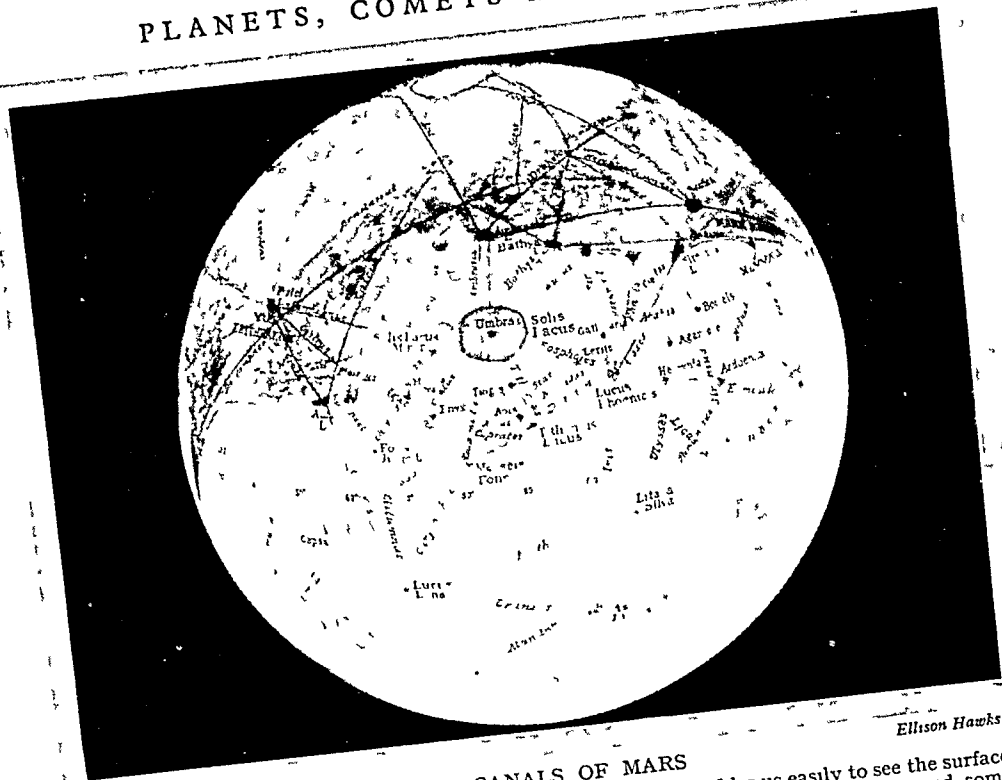
The Importance of Eros.

Of all the hundreds of asteroids, the most important and interesting is the one labelled DQ, and also named Eros. It was discovered in 1898, and is probably only about 15 miles in diameter. Its special interest is due to the fact that the greater part of its orbit lies within that of Mars. At certain favourable times—once every thirty-seven years—it comes as close as within 13,840,000 miles of the Earth. With the exception of the Moon, therefore, Eros comes nearer to us than any other heavenly body. Its parallax has given us a means of revising our measurements of celestial distances, and the whole scale of the Solar System has been re-calculated by the aid of tiny Eros.



THE CLOUDS OF VENUS

If you could hover above Venus, all you would see would be a vast plain of pearly clouds shining under the fierce rays of the Sun. This envelope of clouds is probably 80 miles in thickness, and no doubt does much to protect the surface from the tremendous heat and glare



Ellison Hawks.

THE CANALS OF MARS

The thin atmosphere of Mars, and the total absence of clouds, enables us easily to see the surface of the planet with our telescopes. The planet is covered with long straight lines, and some astronomers think these may be canals planned by the inhabitants of Mars to irrigate the Martian deserts, the canals being fed from the snow of the polar caps, which melt in summer.

As to the origin of the asteroids—we have already mentioned the theory that they represent the fragments of some large planet that exploded. It was thought that the great differences and intersections of their orbits could not be accounted for by any explosion, and that a more probable explanation was that the asteroids were due to a planet that was not properly made. More recent researches seem to suggest, however, that perhaps after all the explosion theory may be correct, and that the present tangle of orbits may be accounted for by the attraction of the great neighbouring planet Jupiter.

JUPITER, THE GIANT PLANET
JUPITER is over 86,000 miles in diameter, and is therefore nearly eleven times larger than the Earth.

Although in volume the giant planet is equal to about 1,312 Earths, its mass is so small that, were we to weigh it in a pair of huge scales, only 317 Earths would be required to balance it. Jupiter is situated some 483,000,000 miles away from the Sun, and it completes a revolution of the Sun in just under twelve years.

The Cloud Belts.

Jupiter is a most interesting object in the telescope, and even a small instrument will show much of interest. The planet itself is surrounded by an envelope of clouds, and we are not able to see below them. These clouds lie in light and dark belts parallel to the planet's equator. The clouds are in a constant state of change—sometimes only two or three broad belts are

to be seen, while at others eight, ten, or even twelve narrow belts are visible. The clouds of which they are composed may remain in existence for days, weeks, or even months. As Jupiter rotates on its axis in less than ten hours, there is a constant panorama, as it were, moving before the eyes of the observer.

The Great Red Spot.

Although the details of the cloud belts are in a constant state of change, there is one marking that seems to be of a more permanent nature. This is the Great Red Spot, an oval-shaped object to be seen in the southern hemisphere and situated in a kind of bay called the "Hollow."

It is believed that the Red Spot was observed in 1665, since which date it has sometimes faded or even disappeared, but always to re-appear at a later date. It appeared and vanished eight times between 1665 and 1708, after which it remained visible for five years. In 1878 it was described as being of a "full red brick colour," and was measured as being 30,000 miles in

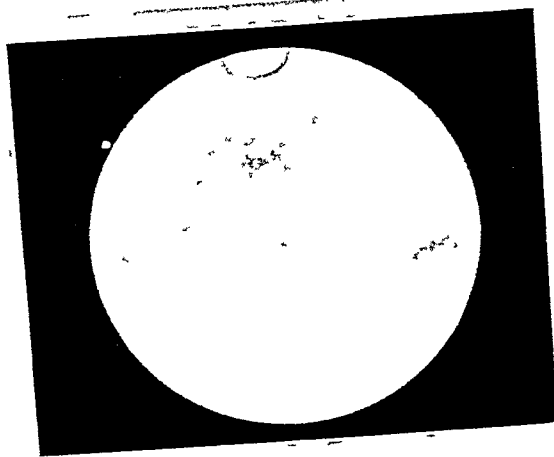
length and 7,000 miles in breadth. Four years later its colour began to fade, and since that date it has sometimes been so faint as to be scarcely visible; at other times it has been seen without difficulty even with comparatively small telescopes.

When the Red Spot was first seen it was suggested that it might be the mouth of some huge volcano on the surface of Jupiter, and that this volcano was so high that it reared above the dense envelope of clouds surrounding the planet. This theory was rejected after numerous observations had been made, however, for it was found that the rotation period of the spot changes, so that it must have a motion of its own and cannot therefore be attached to the planet beneath. It is now thought that perhaps the Spot is a new satellite in the process of formation.

We have mentioned that the rotation period of Jupiter is under 10 hours. As a matter of fact, the different cloud belts have different rotation periods, some travelling faster than others. Generally speaking, the times are between 9 hrs. 55 mins. and 9 hrs. 56 mins., the latter period relating to the clouds in the equatorial zone. These varying rotation periods result in an ever-changing appearance, for the quicker moving clouds overtake others in another latitude, giving the interested observer plenty of work in charting and recording their movements.

Galileo and the Satellites.

We have already mentioned that when (in 1610) Galileo turned his telescope to Jupiter he found the planet to be accompanied by four satellites. Their discovery occurred at a fortunate moment, for it helped to show that the Copernican theory might be correct.



MARS THROUGH THE TELESCOPE

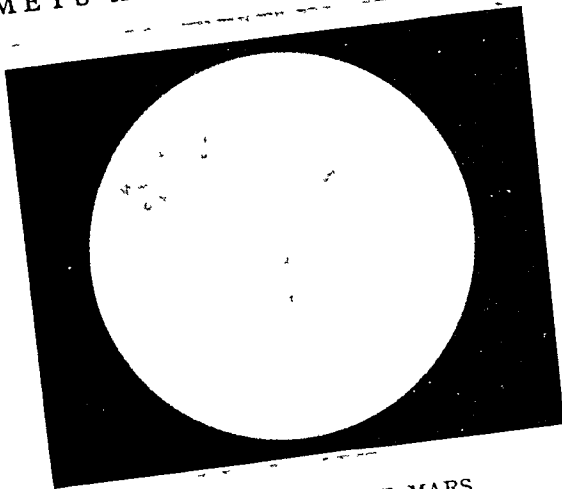
This is Mars seen through a fairly powerful telescope on October 12th, 1909. The white marking on the top of the disc is the South Polar Cap. Some of the so-called canals can also be seen. At the centre is an oasis named *Solis lacus*, or "Lake of the Sun."

Galileo believed that Jupiter and his satellites was an unmistakable illustration of the Copernican teaching, and that the planet was, as it were, a model of the Solar System.

His contemporaries were not so easily convinced, however, and when Clavius—one of the leading astronomers of the day—was told of the discovery he said he would not believe it until he had seen it himself. When actually he did see through the telescope, he expressed the opinion that the glass had been bewitched. Another philosopher—more prudent, perhaps, than Clavius and unwilling to be convinced—refused to look through the telescope lest he might really see the satellites! He died shortly after this incident, and Galileo sarcastically remarked: "I hope he saw the satellites whilst on his way to heaven!"

The four satellites discovered by Galileo can be seen with a small telescope—in fact, a pair of good field glasses will sometimes show them to be present alongside the great planet. Although they have been named—Io, Europa, Ganymede, and Callisto—they are generally referred to by the numbers I., II., III. and IV. Europa is the smallest of the four, being about 2,000 miles in diameter, and Ganymede is the largest, 3,540 miles in diameter.

As in the case of the Earth and as opaque bodies, Jupiter casts a shadow. In the course of their revolutions around Jupiter the satellites sometimes pass through this shadow. When this occurs, they are eclipsed exactly as our Moon is when it passes through the Earth's shadow. The satellites also pass behind Jupiter, when they are said to be "occulted." When they pass in front of his disc they are seen "in transit," and their own tiny shadows are also seen on the cloud belts as little black dots.



ANOTHER VIEW OF MARS

This drawing of Mars was made on March 30th, 1903. Here you see the North Polar Cap, and the dark markings which are probably areas of vegetation in the Martian desert.

In addition to the four Galilean satellites, Jupiter has five others, making nine in all. The eighth satellite, discovered in 1908 at the Royal Observatory, Greenwich, is remarkable in that it revolves in an opposite direction to that generally followed by the other satellites in the Solar System.

SATURN, THE "PLANET WITH THE RINGS"

SATURN is the most beautiful of all the planets—indeed, it may be said that it is the most exquisite object to be seen in the heavens. The planet itself is surrounded by a great system of rings, and in this it is unique, for there is nothing like it to be seen.

Saturn Puzzles the Ancients.

Saturn's rings are invisible to the naked eye, and their existence was unsuspected until Galileo turned his telescope to the planet. Even then their true nature could not be determined, and Galileo wrote to Kepler that: "Saturn has an oblong appearance, somewhat like an olive." Later observers, using imperfect telescopes, came to the conclusion that Saturn was

accompanied by two smaller planets, one on each side, and many curious drawings of the planet were made in those early days.

It was not until 1659 that Huyghens came to the conclusion that Saturn was surrounded by a ring, but being somewhat uncertain as to its exact form he announced his discovery in an anagram—a popular method in those days, as we have already mentioned. Three years later Huyghens confirmed his discovery and made known the solution of his anagram. The jumble of letters previously published were arranged to read: "Saturn is surrounded by a thin flat ring, nowhere touching . . ."

In 1675, Cassini, the French astronomer, found that the ring was divided by a dark rift, which to-day is known as the Cassini division. Another and familiar rift in the outside ring was discovered in 1837 by Encke, and is also named after him. In the following year Galle noticed a faint ring lying between the bright rings and the globe of Saturn, and the ring is now called the "crape ring," because of its resemblance to that material.

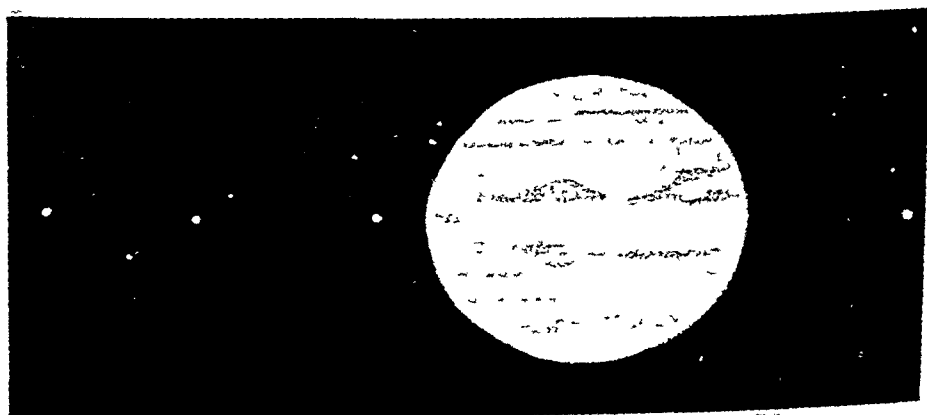
Many measurements have been made

of the rings, but it has been difficult to arrive at accurate results, owing to their extreme delicacy. The generally accepted figures are 171,000 for the diameter and 29,000 miles for the width. Their thickness is generally estimated to be about 10 miles.

Changes in the Rings.

The rings vary in appearance year by year, owing to the difference in the angle at which we see them. They run through their cycle of changes in 29 years 167 days. When "edge-ways," to us they are seen only as a thin needle of light on each side of the planet, whilst on occasion they completely disappear. As time goes on, however, they gradually open out again, until about seven years later they are seen at their widest opening. Once again they commence narrowing, and having passed through the "edge-ways" stage open out so that we then see their under side, as it were.

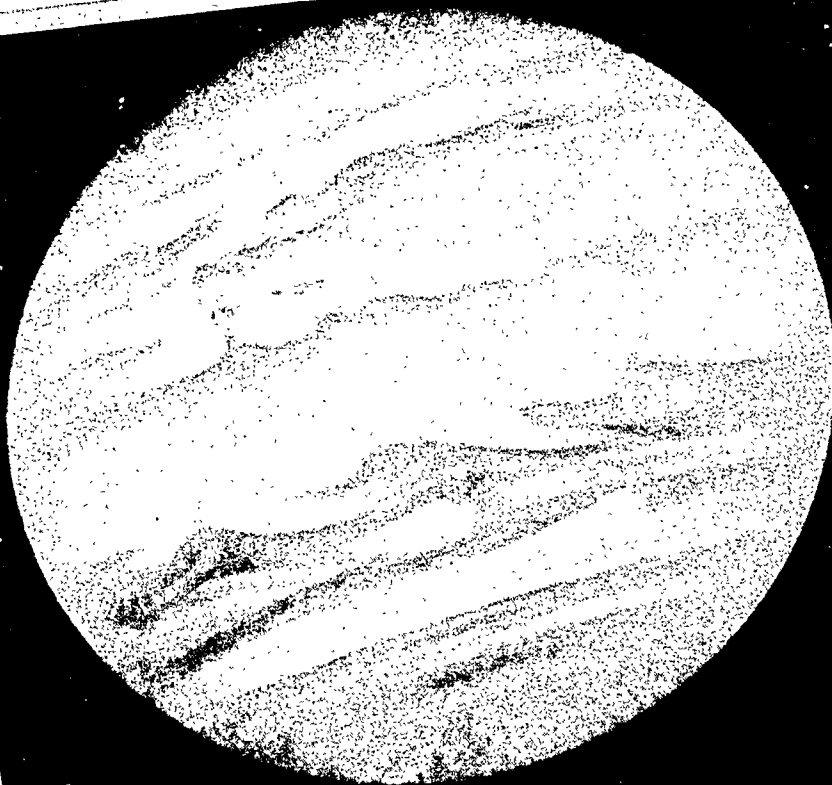
These changes puzzled the early observers, who could not understand why sometimes Saturn appeared "like an olive" and at other times had a



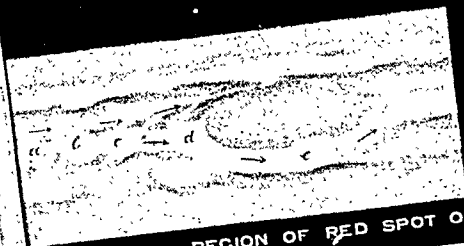
THE GREAT RED SPOT OF JUPITER

In spite of its immense size, Jupiter is too far from Earth for our telescopes to probe its secrets. Its surface is crossed by several belts, and by watching certain markings it has been found that Jupiter rotates on its axis in just under ten hours. One of these markings, which is very persistent, is of a reddish colour, and is called the Great Red Spot. It is shown in the drawing above, a little to the right of the centre of the planet.

THE GREATEST PLANET



THE PLANET JUPITER. OCT. 28 1928



REGION OF RED SPOT ON NOV. 2 AND NOV. 7 1928

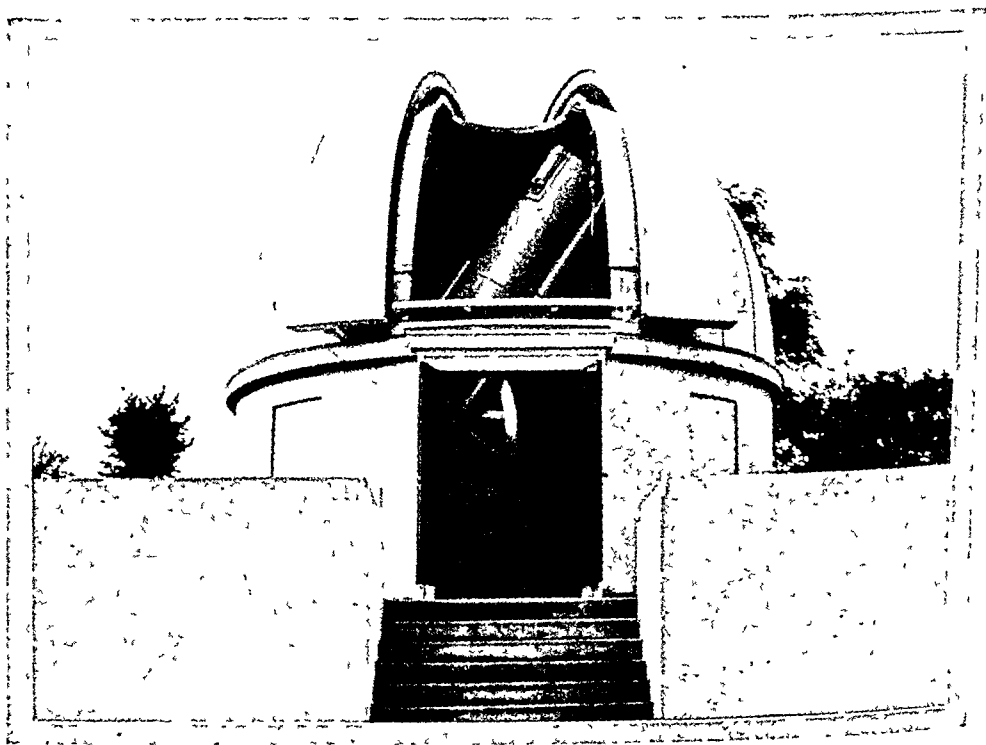
Although its size is 1,300 times that of Earth, the weight of Jupiter is only 300 times that of our planet. This shows that the Giant Planet is still in a nebulous (cloudy) condition, and that millions of years must elapse before it is in a similar condition to that of the Earth to-day. You will notice that Jupiter is flattened at the poles, owing, no doubt, to the speed at which it revolves on its own axis. The puzzle of Jupiter is the Great Red Spot, which has been visible for over 250 years. It is 30,000 miles long and 7,000 wide.

round and normal appearance. A year and a half after Galileo had noted the "oblong appearance," he found to his consternation that it had disappeared and that Saturn appeared only as a slightly oval globe. The change troubled him greatly, for it made him almost believe that he had been mistaken in his earlier observations. "Were the appearances indeed an illusion and a fraud?" he asked. "Has the glass so long deceived me, as well as many others to whom I have showed them . . . ? I do not know what to say in a case so strange, so unlooked for, and so novel." And we can well picture the great astronomer's anxiety, for such a unique appendage as Saturn's ring system would be most difficult to imagine.

What the Rings Are.

There have been many speculations as to the actual composition of the rings. It was proved that they could be neither solid nor liquid. Clerk Maxwell, the famous mathematician who predicted the discovery of the Hertzian waves, suggested that the rings could only consist of a multitude of small particles, and this has since been shown to be the fact.

By means of that wonderful instrument the spectroscope, Professor Keeler, of the Lick Observatory, showed that the rings are composed of numbers of tiny satellites, each revolving in its own orbit around Saturn. They are so small and so far away from us as to be indistinguishable from each other even in our



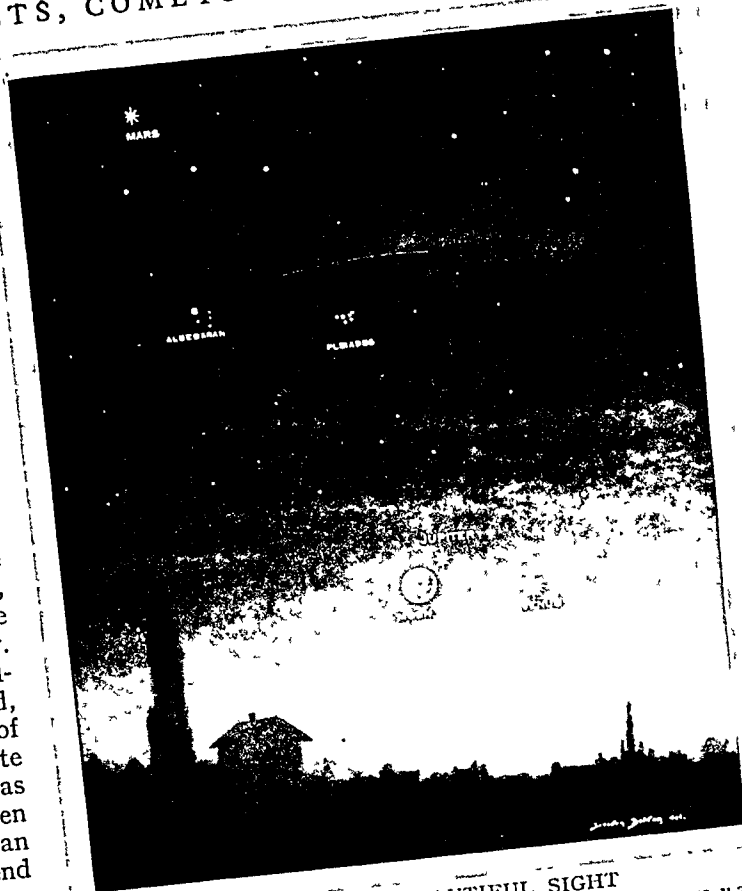
THE NEWEST LONDON OBSERVATORY

Built on high ground to the north of London, Mill Hill Observatory is above the worst fogs, and on clear nights excellent work is done with its powerful telescope. The picture gives a good idea of the way in which the dome of an observatory opens in order to allow the telescope to be pointed towards any part of the sky. Small as the building is, it was costly to build. It was opened by Sir Frank Dyson, the Astronomer Royal.

largest telescopes. The dark rifts are caused by the absence of satellites in those particular regions, and the crape ring is accounted for by the fact that here the satellites are fewer in number.

Saturn has ten satellites in addition to the millions of tiny moons that form the rings. Each satellite is named, and the largest is Titan, which is about the size of Mercury. The faintest satellite is Themis, and, as in the case of the eighth satellite of Jupiter, it has never actually been seen by the human eye. We depend on the photographic plate for a record of its whereabouts. Phœbe, the outermost satellite of the system, also resembles Jupiter's eighth satellite in the fact that its movement around Saturn is retrograde—that is, opposite in direction to that of the other satellites in the Solar System. It requires 550 days to complete one revolution of Saturn.

Saturn's distance from the Sun is 885,900,000 miles, which varies by nearly 100,000,000 miles owing to the eccentricity of its orbit. At its nearest, it is 745,000,000 miles distant from the Earth. It requires 29½ years to complete a revolution of the Sun. The planet is 73,713 miles in diameter—just over nine times that of the Earth.



A RARE AND BEAUTIFUL SIGHT

On March 14th, 1929, a sight of great interest to astronomers was seen in the western sky. Venus, Jupiter and Mars were all in conjunction with the Moon. Venus was at her brightest, shining with silvery brilliance. Jupiter, larger but less brilliant, had a primrose hue, while Mars, higher in the sky, shone with its familiar ruddy colour. The first magnitude star Aldebaran and the wonderful group the Pleiades were below Mars.

URANUS, HERSCHEL'S PLANET

TO the ancients, Saturn was the outermost planet, and until 1781 it was believed that the Solar System was complete with the six planets already known. But in that year a seventh planet was discovered by William Herschel, in circumstances that are as interesting as they are romantic.

A Musician Becomes an Astronomer.
Herschel, who was born in Hanover on the 15th November, 1738, was a

member of the band of the Hanoverian Guards at the early age of fourteen. When the French invaded Hanover at the beginning of the Seven Years' War, Herschel's regiment was defeated at the Battle of Hastenbeck. Although not wounded, the fact that he had to spend a night in a ditch, together with other discomforts that invariably accompany campaigning, led Herschel to decide to change his profession. He deserted and escaped to England, where he arrived with only a French crown piece in his pocket.

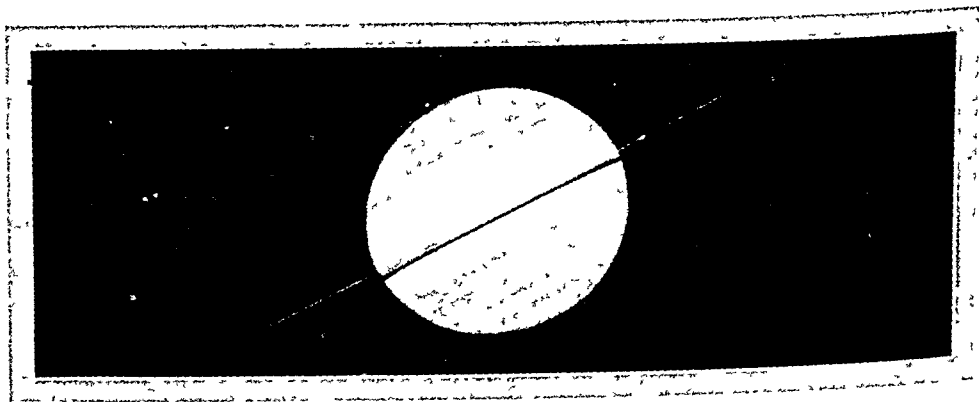
He soon gained a reputation as a musician, however, and by 1766 he was a member of the Pump Room Orchestra at Bath. Later, he was appointed organist at the Octagon Chapel and became a concert director at Bath, which in those days was the resort of fashion, beauty and the talents.

Herschel was naturally of a studious disposition, and he spent every spare moment in endeavouring to learn more about music. He took up the study of mathematics in order to go further into the theory of music, following this with optics and astronomy, both

made up his mind that he would have a telescope so that he might see these wonders for himself. He managed to procure a small telescope, and was so thrilled with what he saw with it that he determined to have a more powerful instrument. The price of such a telescope was more than he could afford, however, so he set to work to make one himself. He succeeded in making a large telescope that was of very good quality, and this was the first of many instruments that he made. Indeed, such was his mastery of the art that his name soon became known throughout the world as maker of fine telescopes, and subsequently he received many orders from foreign potentates and princes.

Herschel Discovers a New Planet.

He continued improving his instruments and making observations until 1781, when he commenced to review the heavens and to examine all the stars above a certain magnitude. On the 13th March, 1781, he was engaged in these observations when he noticed an object that appeared to be quite



SATURN, THE RINGED PLANET

Second in size to Jupiter, Saturn is 745 times greater than Earth, but only 90 times heavier. Its disc carries cloud-belts, similar to those of Jupiter, but it has what no other planet possesses—an immense system of rings. In this drawing the rings are seen edgewise, and are so thin that from this aspect they are almost invisible.

of which subjects are closely connected with mathematics.

He was greatly interested in reading about the wonders of the heavens, and he

different from the stars with which he was familiar. We must here explain that when seen through a telescope a planet shows a tiny disc, whilst a star



A UNIQUE OBJECT

In this second view of Saturn the rings are plainly seen. It will be noticed that there are three separate rings, the two outermost being bright like the planet itself, while the inner is dusky and is known as the *Cape Ring*. Notice, too, the shadow of the planet on the rings, at the left-hand side of the globe.

is visible only as a point of light. To a less careful observer, the object that had aroused Herschel's curiosity might easily have been mistaken for a star, but he saw at once that it presented a small but distinct disc.

At first he thought he had discovered a comet, but as he watched it night after night he noticed that it changed its position in regard to the neighbouring stars. After several observations had been made it became possible to calculate its orbit, from the shape of which it was apparent that the object could be nothing else but a new planet.

We can imagine what great excitement there was when the discovery was announced. Herschel's name was in everyone's mouth, and he was commanded to appear before the King to give an account of his work. His Majesty was so delighted that he appointed Herschel Astronomer Royal, so that he was no longer dependent on music for his living.

Although Herschel suggested that the new planet should be named the *Georgian Star* as an honour to the king, it was eventually christened *Uranus*. After all, this is perhaps a



THE RINGS FULLY OPENED

Saturn's rings are believed to consist of an enormous number of small satellites revolving around the planet. Here they are seen opened to their fullest extent. Saturn also has no fewer than ten moons, the largest of which is almost equal in size to the planet *Mars*.

more suitable name, for it is the title of the mythological father of Saturn and grandfather of Jupiter. As Uranus comes next to Saturn and next but one to Jupiter in order of distance from the Sun, the name is entirely appropriate.

Uranus is over 1,782,000,000 miles distant from the Sun, and requires 84 years to complete one revolution of its orbit. It is about 32,400 miles in diameter and rotates on its axis in $10\frac{3}{4}$ hours. It can only be seen by the naked eye on favourable occasions, and even in a powerful telescope it has little interest for the observer. It has four satellites, two of which were discovered by Herschel, the third and fourth being discovered in 1851. The satellites are remarkable for the fact that they revolve around Uranus in orbits at right-angles to those of the satellites of the other planets of the Solar System. That is to say, instead of revolving from west to east around the planet, they move almost north and south.

NEPTUNE, THE OUTERMOST PLANET

THE discovery of Neptune, the planet beyond Uranus and the outermost planet in the Solar System, was a veritable "triumph of mind over matter," for the planet was found on paper before it was ever seen with the telescope! To understand exactly how this was possible we must first explain about the

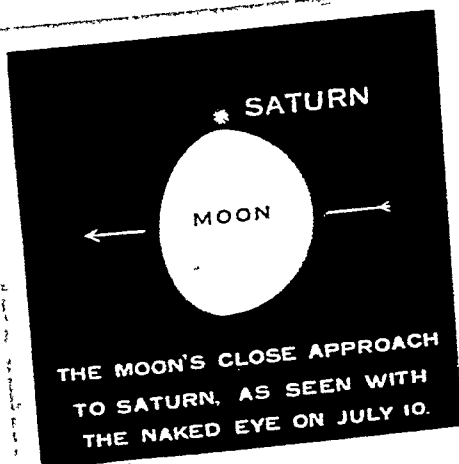
various forces that affect a planet's movements.

The Effects of Gravitation.

Kepler showed that the time required by a planet to complete a revolution of its orbit depends on its distance from the Sun. This was followed by Newton's proof that the movements of the planets were due to gravitation. He made it clear that every body of matter attracts every other body with a force that depends, firstly on the masses of the bodies, and secondly on the distance separating them.

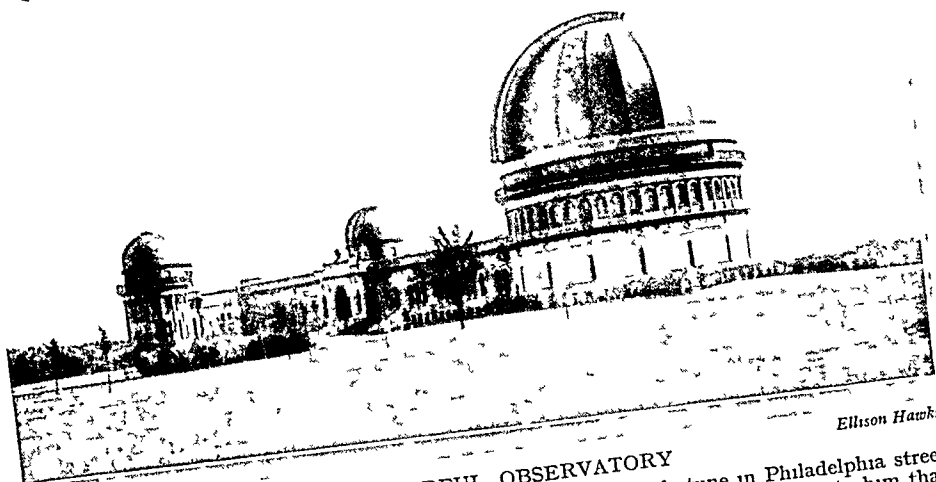
Knowing this, we can quite understand that not only are the planets attracted by the Sun, but that they also attract one another. Of course, the Sun exercises an infinitely greater attraction on the planets because of his huge mass, but the fact remains that the planets themselves do exercise a measurable influence on each other.

Knowing the masses and the distances of the planets from the Sun, mathematicians are able to calculate exactly the positions where a planet should be at any given date. When required, these calculations can be made years ahead; and, in fact, every year there is published a kind of astronomical Bradshaw, called "The Nautical Almanac," containing numerous details about the future positions of the planets.



SATURN IN CONJUNCTION WITH THE MOON

On the night of July 10th, 1927, the very rare sight was seen of the planet Saturn in conjunction with the Moon, that is, the two were in a line from the Earth. In the telescope the Moon was seen to pass just below the ringed planet



A WONDERFUL OBSERVATORY

Charles Yerkes was an American millionaire who made a great fortune in Philadelphia street railways. He was a large shareholder in the old London Underground, and it is to him that London owes the electrification of this and the building of the Central London Tube. He used his money wisely in helping the poor in Chicago, and late in his life to build the magnificent Observatory on Lake Geneva in Wisconsin, of which this is a photograph.

A Difficult Problem.

After the discovery of Uranus its position was carefully measured, and some forty years after it was discovered, Bouvard, a French mathematician, published tables showing its movements. When the predicted positions came to be checked with the actual positions, however, it was found that they did not agree. Bouvard supposed that the observations on which he had made his calculations had not been carefully made, and he prepared new tables based on more recent observations of the planet.

After a few years' time observers noticed that there were still differences between the predicted and the actual positions of the planet. These discrepancies caused Bouvard to suggest that perhaps an unknown planet was attracting Uranus and upsetting the calculations. The problem was to find the position of the unknown planet in the sky simply by the errors arising out of the position of Uranus. This promised to be a task of considerable difficulty and one

that was likely to take a very long time, but in 1843 J. C. Adams determined to undertake the necessary calculations. For two years he pursued his task, and in October, 1845, took to the Astronomer Royal his papers, which contained the elements of the orbit and the calculated position of the theoretical planet. Unfortunately, the Astronomer Royal paid little attention to the matter, placing the papers in a drawer from which they were not brought out until it was too late.

Neptune Discovered.

In the meantime a young French mathematician, named Leverrier, also had been working on the problem, quite unaware of the fact that Adams had already commenced the task. Leverrier worked out the position of the supposed planet and wrote to Encke, the Director of the Berlin Observatory, asking him to search that part of the sky. When Encke received this letter he instructed one of his assistants to commence a search, and on the same evening (the 23rd September, 1846) this

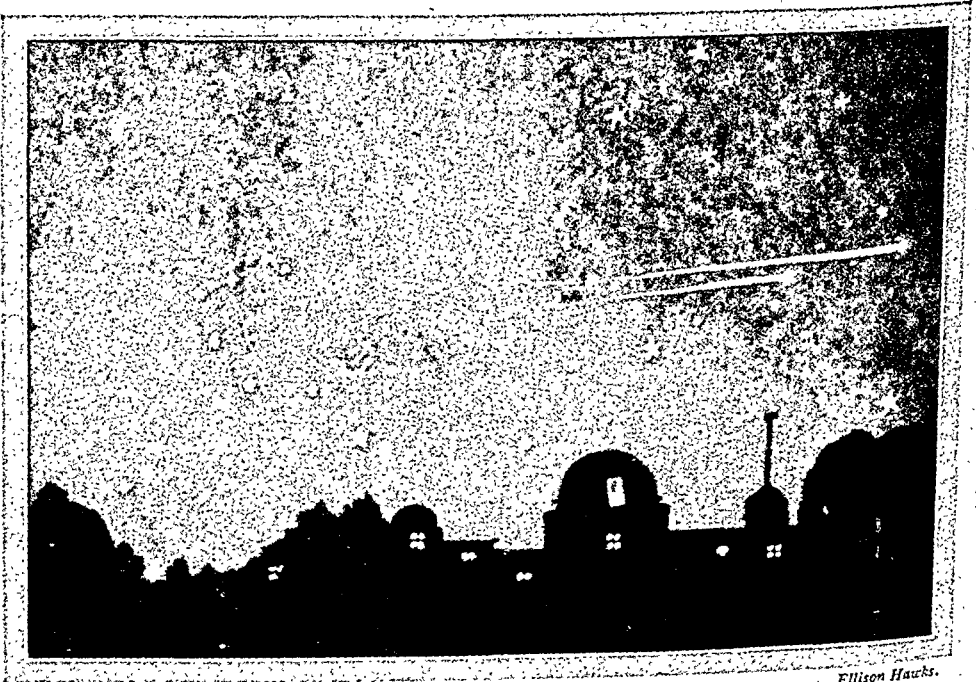
observer found an object of about the eighth magnitude that was not shown on the star map. The same object was observed on subsequent evenings, and as it moved its position each night it was evident that it was the object of the search and a new planet.

In the meantime the Astronomer Royal at Greenwich had received an account of Leverrier's work, and on reading it he remembered the papers that Adams had left in his care some nine months before. Taking them out of the drawer in which he had placed them, he was at once struck with the similarity in the results obtained by the two mathematicians. Remembering that both Adams and Leverrier had been working on the problem unknown to each other, he realised that there was something more than a

mere coincidence in the sameness of the results. He therefore asked Professor Challis, of Cambridge, to search for the new planet, and on the 28th September, Challis found the same object that had already been observed at Berlin a week before.

Neptune's Distance.

Thus, Neptune was discovered in England and in France by the two mathematicians before it was seen in a telescope. As everyone knows, Neptune was the God of the Seas, and the name given to this outermost planet is certainly appropriate. Exactly as Neptune was thought to live in the gloom and darkness of the ocean depths, so is the planet that bears his name plunged in the gloom of space. It is over 2,794,000,000 miles distant from the Sun—so far away that details



Ellison Hawks.

A REMARKABLE DOUBLE METEOR

At half-past one on the morning of November 13th, 1909, watchers saw this strange sight over the city of Leeds—two very large and brilliant meteors crossing the sky in the same direction. Swarms of meteors are met by the Earth several times in each year, and some solitary ones may be seen on almost any clear night.

THE STORY OF A METEOR



Every hour of the day and night the Earth is colliding with meteors. Although these, as a rule, are very small, the death rate would be fearful if we were not protected by our atmosphere against these celestial bullets. The terrific speed at which meteors strike into our atmosphere reduces all but the largest to powder before they reach the ground. The small diagram at the top gives the path of the swarm of Perseid meteors that the Earth meets at regular intervals.

of its surface are invisible to us, and we have no means of telling how long it requires to rotate on its axis. Its diameter is 31,000 miles—nearly four times that of the Earth—and it requires over 164 years to complete one revolution of its orbit.

Neptune is so far away from the Sun, that to anyone living on the planet the Sun would appear no larger than Venus seems to us, although it certainly would appear immensely brighter. Mercury, Venus, the Earth and Mars would be invisible, and Jupiter and Saturn would appear as Mercury appears to us as regards its rising and setting.

So far as we know, Neptune has only one satellite, although there may be others that are invisible to us owing to the great distance. It is one of the largest satellites in the Solar System, its diameter being estimated to be 2,260 miles.

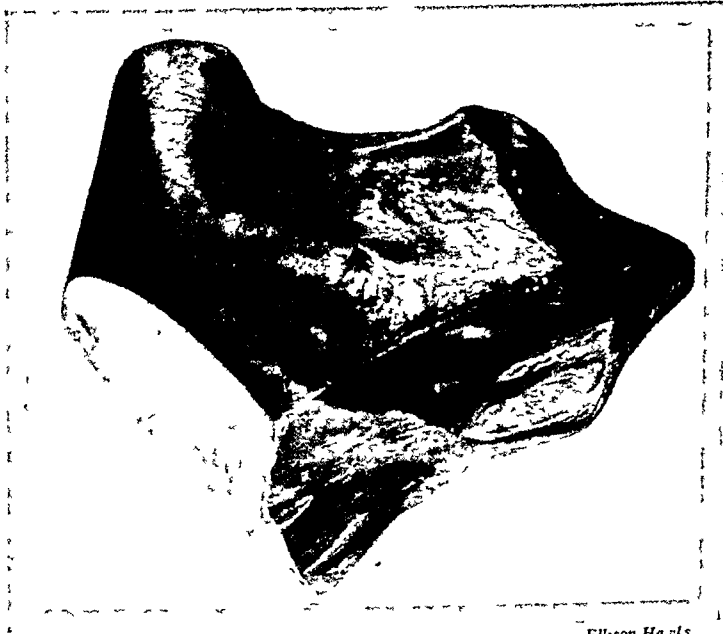
SHOOTING STARS, METEORS AND FIREBALLS

OFTEN when we are out on a clear night we see a streak of light suddenly dash across the sky, to disappear as silently as it came. It seems almost as though a mighty star has fallen from its place in the heavens, but if we are anxious about it we can reassure ourselves, for a glance at the constellations shows us that each of our friends is in its accustomed place and none is missing. Few people other than astronomers can bring themselves to believe that these shooting stars are not stars at all, but such is the case, for they have a far more humble origin. As a matter of fact, a shooting star does not actually "shoot" in the heavens but in the Earth's atmosphere, so that it is therefore comparatively close to us. Instead of taking place at a distance that could

only be measured in billions of miles, the "star" is only some 50 or 100 miles above our heads

Fireballs and Meteors.

To understand what a shooting star is we must realise that there are multitudes of small bodies circling through space, each in its own orbit, and that at some time or another these objects approach the Earth. These small bodies are travelling more than one hundred times as fast as a rifle bullet, and when they enter our atmo-



IRON FROM THE SKY

Elison Harts

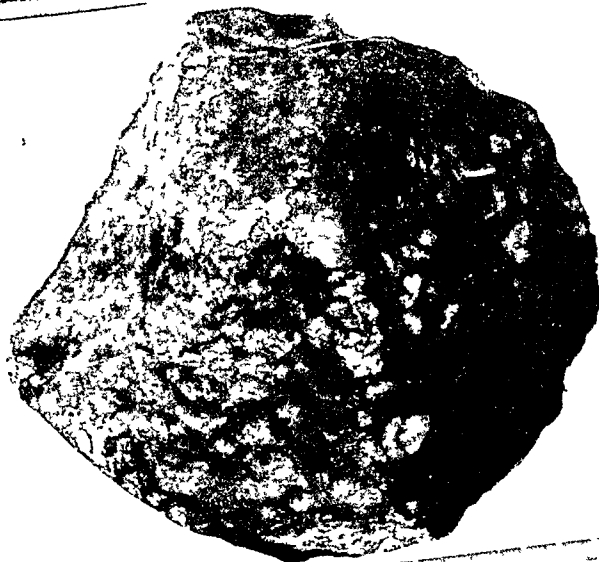
Meteors nearly always contain a large amount of iron. This is a picture of a meteor that fell near Wellington, in Shropshire, on April 20th, 1876, and which is almost pure iron. The outer part has been fused by heat caused by a swift passage through the Earth's atmosphere

NEWNES'
PICTORIAL KNOWLEDGE

sphere their speed is so great that they are heated to incandescence by the friction of their movement through the air. They vary in brilliance from being large enough to light up the landscape for miles around, to being but a faint streak. The brightest are known as fireballs; the next as meteors; and the faintest ones as shooting stars. It has been calculated that over 400,000,000 of these bodies are captured by the Earth every year. There are on an average about a hundred fireballs every year, and meteors and shooting stars may be seen almost any clear night.

A Huge Meteorite.

Occasionally a meteor is of sufficiently large size to withstand the terrific heat generated by its passage through the atmosphere, with the result that it does not melt entirely, but some part of it reaches the Earth, falling as a hard mass that is known as a meteorite. Despite many ancient traditions relating to the fall of meteorites from the sky, it was not generally believed that it was possible for these bodies to reach the Earth until 1803, when there was undoubted evidence that a meteorite did fall at Laigle, in France. One of the most famous objects of this class fell in 1876 at Rowton, in Shropshire, and may now be seen in the South Kensington Museum, where there is a splendid collection of meteorites. Some meteorites are so large that they weigh



Ellison Hawk's

ANOTHER BRITISH METEOR

This lump of mixed stone and iron fell near Scarborough, in Yorkshire, on December 13th, 1795. It is one of the largest meteors that ever fell in England, and weighs 56 pounds. This photograph is one-third the natural size.

several tons, the largest so far known being one of three brought from Greenland by the famous Arctic explorer, Peary. It weighs 36½ tons and measures 11 ft. × 7 ft. × 5 ft.

The majority of meteors and shooting stars are dissipated as they travel through the atmosphere, and their remains fall lightly to Earth in the form of a fine metallic dust. When this dust is examined with a microscope it is seen to consist of tiny rounded particles, from which the rough corners have been worn by friction with the atmosphere. Meteoric dust is infinitely finer than sand grains, and differs from them considerably in that, whilst sand grains are rough and unshapen, meteoric dust is rounded like shot.

The appearance of a meteor cannot be predicted, because it is quite invisible until it enters our atmosphere. We can say, however, that on certain nights there will be more meteors than

at ordinary times. This is because meteors travel around the Sun in streams, and we know that on certain nights the Earth will cross one or other of these meteor streams.

The Leonids.

On the night of the 13th November, 1833, there occurred what was probably the finest display of meteors ever seen by man—it is estimated, indeed, that on that occasion something like 240,000 meteors were seen. After this wonderful display had taken place it was remembered that Humboldt had observed a similar shower in 1799, or thirty-three years before.

Further inquiries resulted in the discovery that there had been showers of shooting stars every thirty-three years for at least a thousand years preceding. It was suggested, therefore, that these displays were caused by the same stream of meteors, and because the paths of the meteors of 1833 all seemed to commence at the constellation called Leo, these meteors were called the "Leonids." It was confidently predicted that as the Earth crossed this meteor stream about every thirty-three years, another display could be expected in 1866.

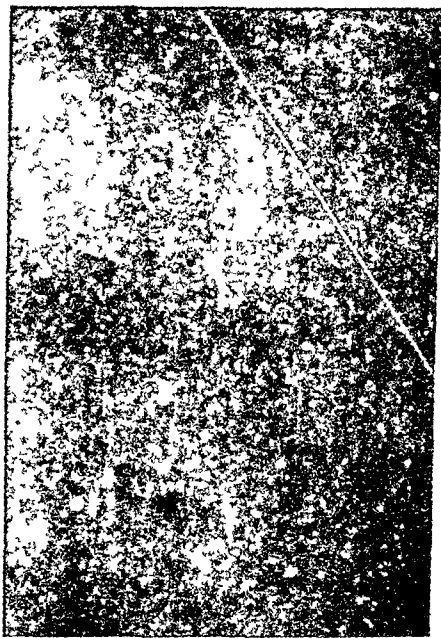
As the shower again duly appeared and was an impressive spectacle, astronomers had no hesitation in

predicting a further display in 1899. Although hundreds of people in every town and city sat up to watch through the night, they were disappointed, for, remarkable to relate, the meteors did not put in an appearance! It was apparent that something had happened to prevent their return, and it was suggested that the orbit of the meteors had probably been diverted by the attraction of the giant planet Jupiter.

COMETS, VISITORS FROM SPACE

FROM what we have read, we realise that there are certain definite facts known about the planets. In the

first place, they may be regarded as being more or less solid objects; they move around the Sun in orbits that are almost circular, never travelling so far away as to be lost to our sight; and they are regular in their motions—that is to say, we can predict their positions with accuracy. We have now to consider an entirely different class of heavenly bodies—comets, which differ from planets in almost every respect.



Ellison Hawks

PHOTOGRAPHING A METEOR

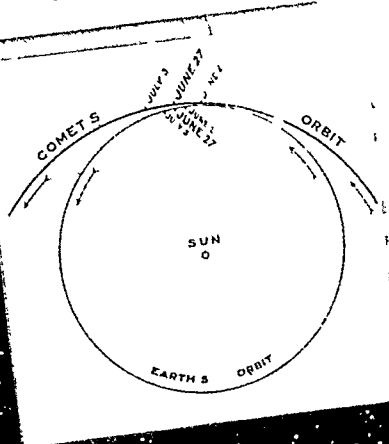
The white streak running across the top right-hand side of this photograph was caused by a meteor that entered our atmosphere whilst a group of stars was being photographed. Travelling at a speed of perhaps twenty five miles a second its trail was recorded by the sensitive photographic plate

Comets and their
Tails.

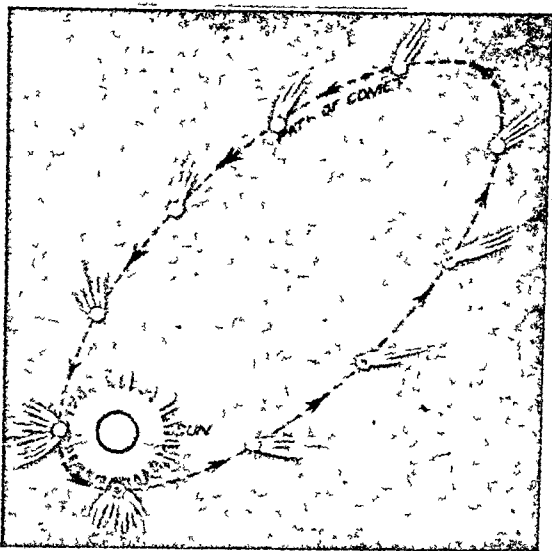
The name "comet" comes from the Latin *coma*, "a hair," and these objects are

so called because they often carry a hair-like tail. Strange to say, we do not know what comets really are, nor what is their origin. For one

COMETS ARE MERELY GAS



Comets are very tenuous and must be much more rarefied than fog. Stars can be seen through their tails, which sometimes are millions of miles in length. This is a picture of the famous Pons Winnecke comet, last seen in 1927. It is of a strange and unusual shape, and is believed to have a solid head. The small diagram above shows a portion of its orbit.



THE PATH OF A COMET

A comet does not circle the Sun as do the planets, but travels in a different kind of orbit. Its journey may carry it far into the depths of space and take many years to complete. Halley's comet requires 75 years to complete one revolution of its orbit.

thing, there have not been many bright comets that could be examined with modern instruments, the majority of those visible in recent times being comparatively small. It seems probable, however, that comets are largely composed of gaseous matter, or at the most consist of swarms of meteors, held together by their mutual attractive powers.

A comet consists principally of two parts—the head, or nucleus, and the tail. Although the heads of different comets do not differ very much from each other except in their size and colour, there are considerable differences in their tails. Sometimes these are short, whilst at other times they are curved and long. Often there is more than one tail, and comets without tails are not unknown. Almost without exception, however, the tails of comets always point away from the Sun, as though there is some kind of solar force that repels them.

The Ellipse and the Parabola.

Another point of difference between comets and planets is their movement through space. In most cases this movement is so irregular that it is impossible for us to tell when a bright comet will be seen in the heavens. To understand this we must explain that there are two kinds of comets—the solar comets and the interstellar comets. The former follow regular paths and belong to the Solar System, but the latter travel far out in the depths of space among the stars—as their name implies.

Those of you who have studied geometry know the difference between an ellipse and a parabola. The solar comets travel in elliptical (or closed) orbits in one of the foci of which the Sun is situated. The

interstellar comets travel in parabolic (or open) orbits that are quite different to the type of orbit pursued by the solar comets. A comet that travels in an elliptical orbit returns at regular periods, but as a parabola is an open curve with its two branches stretching away from each other and always getting further apart, a comet that travels in this type of orbit visits the solar system only once. Unfortunately, the largest and brightest comets of history seem to have belonged to the interstellar comets which have come unexpectedly and are not subject to periodical returns.

Comets as Portents.

It would seem that in past ages comets excited even more fear than total eclipses. Perhaps this was due to the fact that, although the ancients were able to predict eclipses, they were quite unable to give any idea as to when a comet would appear. It was thought that comets were signs sent

by the gods as a warning of some coming disaster. Others associated comets with any extraordinary happening that might chance to occur at a convenient time. For instance, the Romans thought that a great comet that appeared in 43 B.C. was a chariot sent by the gods to transport the soul of Julius Cæsar, who had been assassinated shortly before.

In 1060, William of Malmesbury, writing about the death of Henry, King of France, said: "Soon after, a comet—denoting as they say, a change of kingdoms—appeared trailing its extended and fiery train along the sky. Wherefore a certain monk of our monastery, bowing down with terror at the sight of the brilliant star, exclaimed: 'Thou art come. . . I have seen thee long since, but now I behold thee much more terrible, threatening to hurl destruction on this country.'" Later, the immortal Shakespeare voiced the general opinion when he wrote those celebrated lines in "Julius Cæsar":

"When beggars die, there are
no comets seen;
The heavens themselves blaze
forth the death of princes."

It is rather fortunate for Astronomy that the ancients were so interested in comets, for their records—and particularly those of the Chinese—have been of the greatest assistance to us in tracing out the past appearances and history of certain comets.

Halley's Comet.

A whole book could be written about the famous comets of history. As our space is limited, we can only briefly mention one that is of great interest. This is the comet named after the celebrated English astronomer,

Halley, a great friend of Sir Isaac Newton, who in his famous "Principia" made the suggestion that comets revolve around the Sun as the planets do.

Halley determined to investigate the orbits of certain bright comets, and he mapped out the orbits of 24, which had appeared between 1337 and 1698. He noticed that there were three that followed orbits so remarkably similar that, it seemed, they could scarcely be three different comets but rather three different appearances of the same comet at intervals of seventy-five years. Going further back, Halley found that a bright comet had been seen on three previous dates separated by similar intervals that separated the three later appearances. This made six appear-



A COMET WITH MANY TAILS

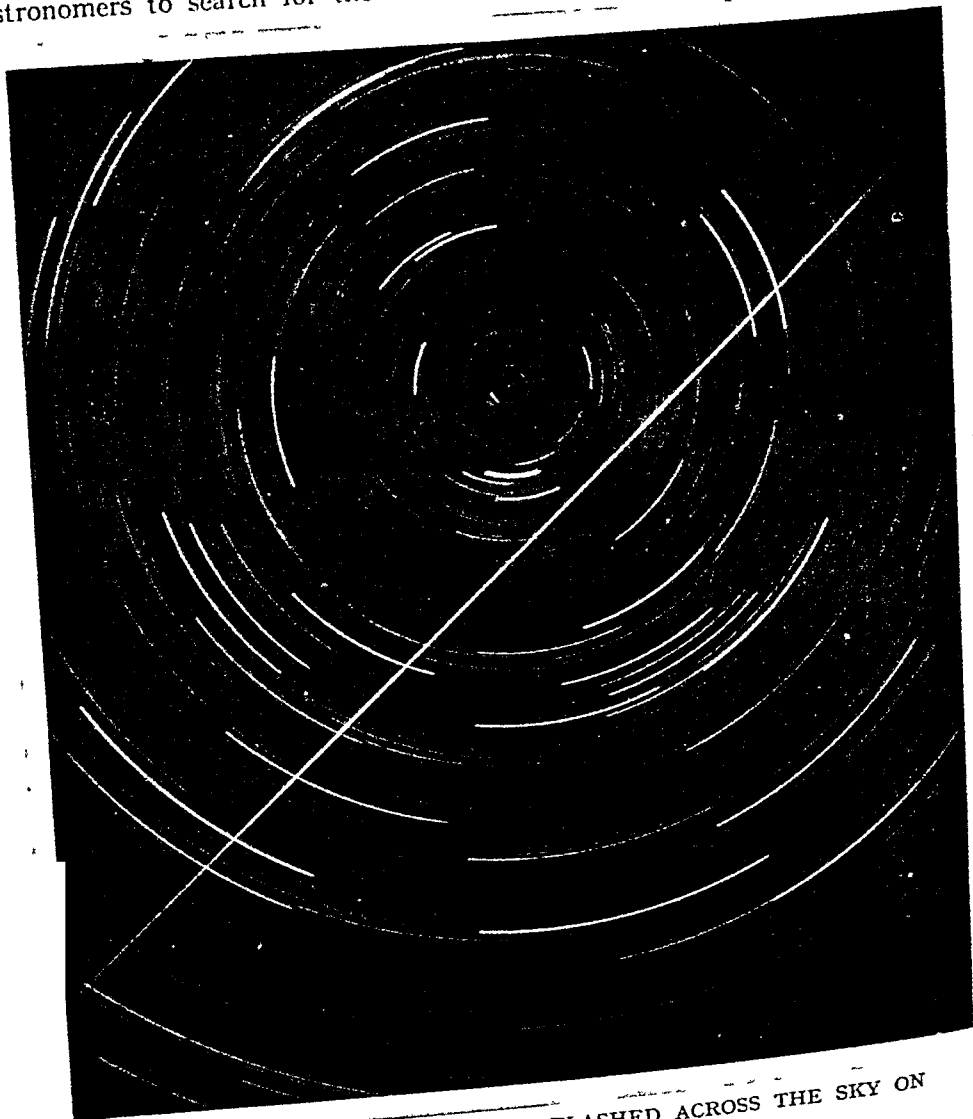
This was the third comet of the year 1908 and is therefore known as 1908c. The comet was remarkable for the many different changes that occurred in its appearance.

ances in all, each separated by a period of seventy-five years.

Halley predicted that the comet would return again in the year 1757. He did not live to see the fulfilment of his prediction, for he died in 1742, eight years after his prediction had been made. His work was not forgotten, however, and as the year 1757 drew near, preparations were made by several astronomers to search for the comet.

But all the professional observers were outdone, for the comet was discovered on Christmas night, 1758, by an amateur astronomer, named Palitzsch, with only a small telescope.

The fulfilment of the prediction definitely established the fact that some comets do return at regular intervals, and we shall always remember that we owe this discovery to Edmund Halley.



THE TRAIL OF A METEOR THAT FLASHED ACROSS THE SKY ON
NOVEMBER 16, 1922.

The curved markings are trails of stars around the Pole Star, the curved appearance being due to the rotation of the earth during the exposure of the photographic plate.

The Wonders of The Heavens



The Story of Astronomers and their Work



Ellison Hawks.
PART OF THE MILKY WAY IN THE CONSTELLATION OF OPHIUCHUS
The photograph clearly shows some of the remarkable "dark lanes," believed to be due to dark gaseous clouds that blot out the stars behind.

THE STARS

THE objects that we have considered—planets, comets, and meteors—all belong to the Solar System, revolve around the Sun, and are governed by his gravitational powers. We are now to learn something of the stars themselves, which are vastly different from the planets.

In the first place, there is the difference in their appearance to which we referred when dealing with the discovery of Uranus. Even with the naked eye one can tell the difference between a planet and a star, for whereas a planet seldom twinkles, but shines with a steady light, a star twinkles almost unceasingly. Then, again, in the telescope a planet presents a definite disc, whereas a star is but a shining point of light no matter how

powerful the telescope may be. But the greatest difference that we can observe is the fact that the stars never change their positions relative to one another, whilst night by night a planet moves its position among the stars. The name planet means "a wanderer," and it was given to these objects by the ancients, for they had noticed that these objects moved about the sky.

As we have already seen, the planets are other worlds circling round the Sun in company with the Earth. We have now to learn that the Sun is a star, and the stars themselves are suns. Whether or not these other suns have planets circling around them—as our star has—we do not know, because they are so far away that even our most powerful telescopes could not show them.



AN ISLAND UNIVERSE

This spiral nebula is to be seen in the constellation of *Canes Venatici*, the "Hunting Dogs." The nebula, which lies in the remotest depths of space, may be a universe in process of being formed. When you look at it your eyes are receiving light that left it thousands of years ago.

Distances of the Stars.

The distances of the stars are indeed enormous—Alpha Centauri, the nearest star, is over 25 billions of miles away from us. This is a number that we cannot be expected to understand, but let us try to gain some idea of what it means. If we were to commence counting, we should have to spend something like 300,000 years without stopping day or night before we reached 25 billions!

Many of you no doubt have heard of the red corpuscles—tiny discs in our blood. They are so minute that if it were possible to pile one on top of another, as coins are sometimes seen piled in a bank, it would take about 15,000 corpuscles to form a pile one inch in height.

If we allow one corpuscle to stand for each mile in the distance that separates us from Alpha Centauri, we should require a pile no less than 26,000 miles in height to represent the total distance! Sirius, the brightest star in the sky, is over twice the distance of Alpha Centauri.

These illustrations refer only to the distance of the nearest star, and would not serve to represent the distance of the majority of stars, in comparison with which Alpha Centauri and Sirius are comparatively close to us.

Meaning of 'Light-year.'

Astronomers have found that it is useless to endeavour to express a star's distance in miles, and so they use another standard. We know that light takes time to travel through space, exactly as sound takes time to travel through air. If we see a gun fired say a mile away, we first see a puff of smoke and then hear the report of the explosion, the interval between depending on our distance from the gun. Sound travels about 1,100 ft. a second, but light is infinitely more swift travelling some 186,000 miles a second. At this rate it takes but a second and a quarter to reach us from the Moon, and about eight minutes from the Sun. To cross the intervening gulf of space from Alpha Centauri, however, it requires four years and four months, during which time it is travelling at 186,000 miles each second! Thus, if Alpha Centauri were to be extinguished at the present moment it would continue to be visible to us as a star for four years and four months.

Astronomers use the rate that light takes to travel to express the distance of the stars. Alpha Centauri is said

THE STARS

STAR MAGNITUDES

to be $4\frac{1}{2}$ light years; Sirius is $8\frac{1}{2}$ light years; and Procyon $10\frac{1}{2}$ light years distant. Vega, the bright blue star in the constellation of Lyra, is some 21 light years distant; and Polaris, the Pole Star, is 44 light years away from us. If you are interested in making calculations you can easily work out the distance in miles of any of these stars, by multiplying the number of seconds in the light years, and again multiplying your result by 186,000.

We must mention that it is not necessarily the brightest stars that are nearest to us. Everyone knows that the stars are not all of the same brightness—indeed, it has been said that no two stars shine with exactly the same amount of light. Although the bright stars may seem to be nearer to us than the faint ones, it is more than likely that they are larger or more luminous suns at a great distance, while the faint stars may be smaller or less brilliant suns near at hand.

The stars are divided into constellations or groups, and it is believed that this was done ages ago by the Chaldean shepherds. They fancied the stars formed figures in the sky, just as we sometimes imagine we can see pictures in the fire. The Chaldeans gave these star figures names, and these same names have persisted to this day. The Chaldean shepherds also made up imaginary tales and legends about the deeds performed by their heroes in the skies, and although most of these stories have been lost a few of them have been handed down to us to-day.

Some of the brighter stars themselves are now known by special names, but the majority are known by prefixing a Greek letter to the name of the constellation in which they are situated.

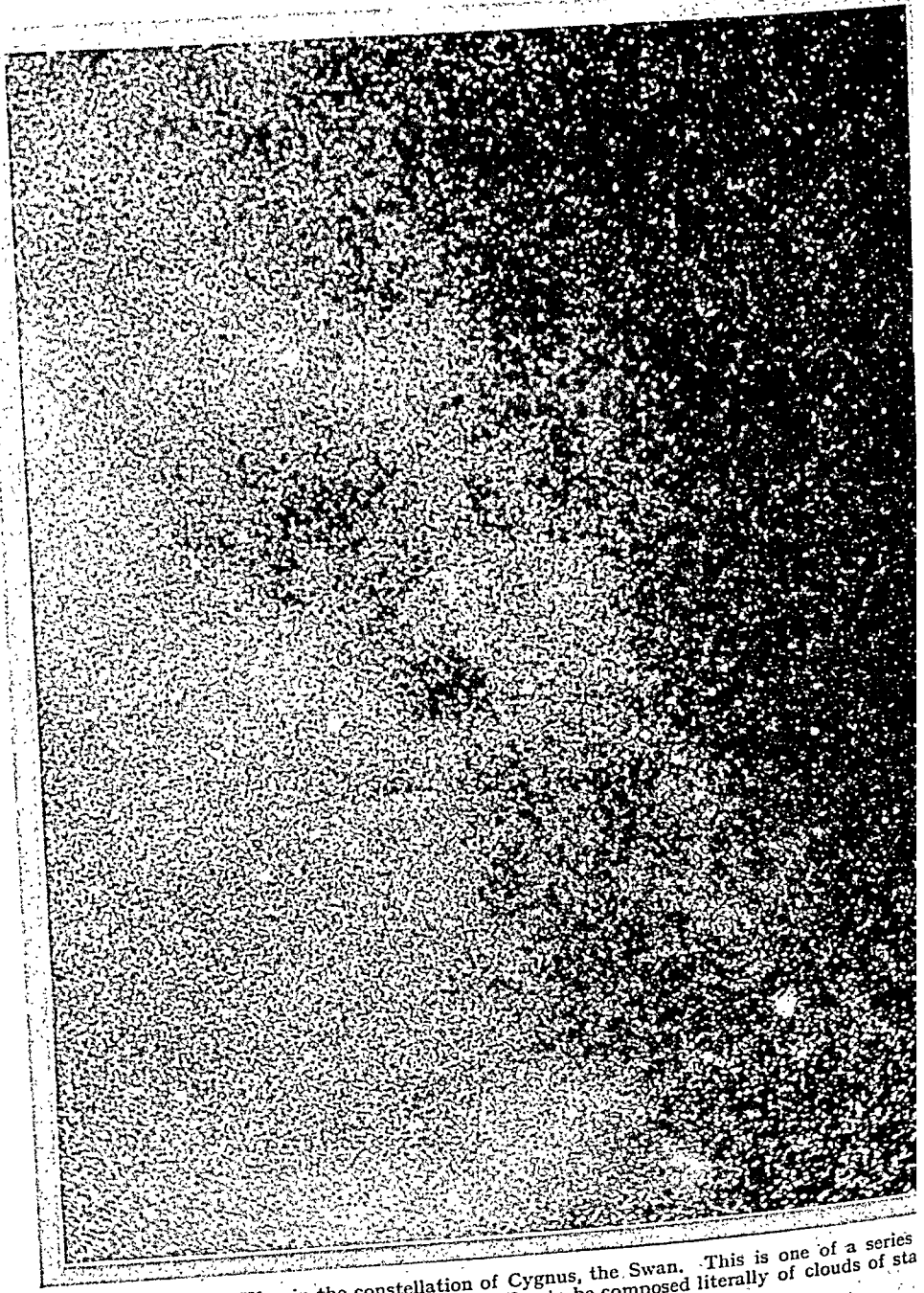
WE all know that stars are not all of the same brightness. They are classed by magnitudes, which, however, do not take into account the actual size of the stars, but only deal with their brilliance as it appears to us. We must remember that although the bright stars seem to be nearer than the fainter stars, it by no means follows that this is actually the case. The bright stars may be larger or more luminous suns at a great distance, and the faint stars smaller or less brilliant suns near at hand.

It has been found that the number of the stars in each magnitude increases in a certain proportion down the scale. Roughly speaking, each magnitude has



THE GREAT NEBULA IN ORION
One of the grandest objects in the heavens. The astronomers' telescopes reveal hundreds of thousands of these wonderful nebulae of all sizes and shapes.

MILLIONS OF STARS REVEALED



Part of the Milky Way in the constellation of Cygnus, the Swan. This is one of a series of remarkable photographs revealing the Milky Way to be composed literally of clouds of stars, each one of which is a sun.

A MYSTERY OF THE HEAVENS



This photograph, taken with the 100-inch telescope of Mount Wilson Observatory, was given an exposure of four hours. It reveals a mysterious dark nebula, which eclipses the light of the stars behind it, in the constellation of Aquila, the Eagle.

about three times as many more stars as the preceding one. Thus, there are 11 stars of the first magnitude, 39 of the second, 133 of the third, 446 of the fourth, and so on. Stars of the first magnitude give about 100 times as much light as those of the sixth, and about a million times as much as those of the sixteenth.

There are a few stars that are brighter than the average stars of the first magnitude, and these are specially classified. If we take Aldebaran (in the constellation of *Taurus*, the Bull) as a typical first magnitude star, Sirius (in *Canis major*, the Large Dog) is about nine times as bright and is said to be one and a half times above first magnitude. Sirius is the brightest star in the Northern hemisphere.

The Number of the Stars.

People with fairly good sight can see stars of down to about the fourth magnitude, whilst those with keen sight can see stars down to the sixth magnitude. If we look up at the sky on a clear night we may think we can see tens of thousands of stars. As a matter of fact a person of average sight can see only about 500 stars with the naked eye. Those with keen sight can see about 4,500 stars without a telescope, whilst quite a small telescope will show stars down to the ninth magnitude, of which there are about 140,000 visible. The 40-in.

telescope of the Yerkes Observatory will probably show 100,000,000 stars, whilst the 100-inch reflector of Mount Wilson can photograph stars of about the twenty-first magnitude, of which it is estimated there are at least a billion!

Star catalogues have been made from time to time, and include the position of the stars measured as accurately as possible in the circumstances appertaining at the time the catalogue was made. The first star catalogue, made by Hipparchus, the Greek astronomer, contained the places of 1,080 stars, but unfortunately it is lost. The oldest star catalogue we possess, made about 137 A.D., is contained in Ptolemy's *Almagest*, and gives the position of 1,025 stars. In 1580, Tycho Brache compiled a catalogue of 1,005 stars, which catalogue was the last to be completed before the invention of the telescope. In 1862, Argelander, at Bonn, in Germany, completed a more modern catalogue.

Using a 2½-inch telescope, he catalogued over 324,000 stars.

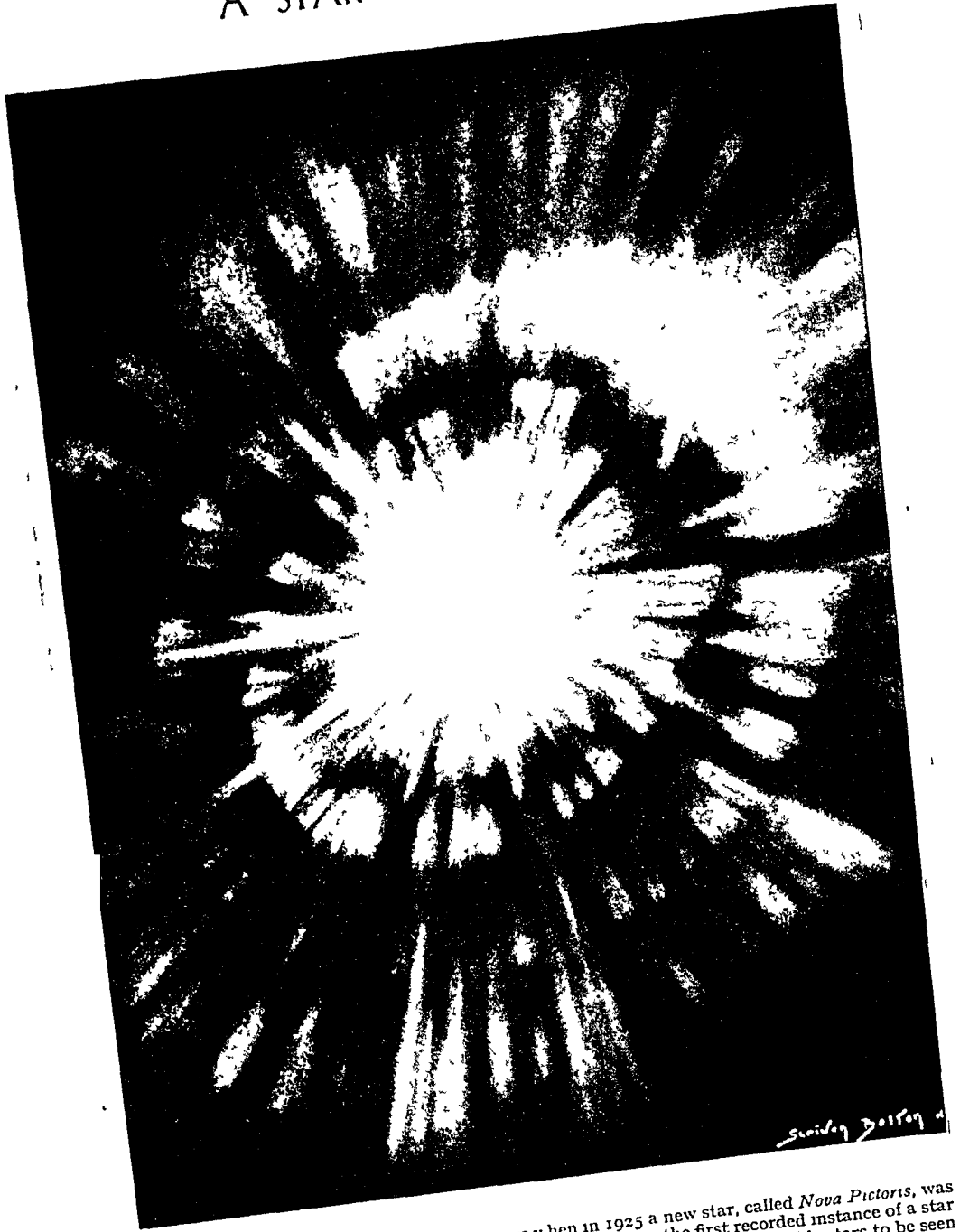
The introduction of the photographic dry plate was of great importance to Astronomy, for photography enables accurate records to be made of star positions. In 1887 a great photographic catalogue was planned, the work being shared by eighteen observatories—Algiers, Bordeaux, Cape of Good Hope, Catania, Cordoba, Greenwich, Hel-singsfors, Melbourne, Monte



A RING NEBULA

This curious object is the annular or ring nebula in the constellation of *Lyra*, the Harp.

A STAR THAT SPLIT



Great interest was caused among astronomers when in 1925 a new star, called *Nova Pictoris*, was seen to flare up and (apparently) to split into two. This was the first recorded instance of a star becoming "double before our eyes," as it were, although there are many double stars to be seen in the heavens. Although this tremendous upheaval occurred some 500 years ago, it is only now that we are able to see it. It has taken all those centuries for light to bridge the tremendous gulf that separates our little planet from this giant cataclysm.

Video, Oxford, Paris, Perth (Western Australia), Potsdam, Rome, San Fernando, Sydney, Tacubaya, and Toulouse—each observatory undertaking to photograph a certain part of the heavens. The whole catalogue will necessitate the exposure of 100,000 plates, and at the time of writing about half the required number of photographs have been taken. It is estimated that when the catalogue is finished the position of nearly 4,000,000 stars will be recorded. Not only will this catalogue be of the greatest value to generations of astronomers who follow, but it will be a marvellous achievement—a triumph of accuracy, perseverance, and patience.

The Stars are Moving.

Early star catalogues have been of great assistance to astronomers in helping them to find out what

changes are taking place in the position of the stars—for the stars are not fixed in space, as they are generally supposed to be. Their movement in space (called the "proper motion") is quite distinct and separate from their movement across the sky each night, which, of course, is simply due to the Earth's rotation on its axis. Over 200 years ago Halley discovered that the two bright stars Sirius and Arcturus had changed their places since the days of Ptolemy. Sirius had moved southward by about half a degree and Arcturus by a full degree.

Some of the stars have enormous proper motions—that is to say, they are moving at incredible speeds—but, owing to their enormous distances from us, their movements in the sky can only be detected over a comparatively long period of time. One of

the swiftest moving stars is that known as Groombridge 1830. This star is of the sixth magnitude and is moving at a speed of about 528 miles a second. Another star with a large proper motion is an eighth magnitude star in the constellation of Pictor. As the star is at about the same distance from us as Sirius, it is therefore either much smaller or less brilliant than Sirius, for it is not visible to the naked eye. Its proper motion is such that in about 200 years its position will have altered by about as much as the diameter of the full Moon.

It is interesting to know that our star, the Sun, also has a proper motion. Accompanied by the planets and their satellites he moves at a speed of about 13 miles a second.



THE "BRIDAL VEIL" NEBULA

The beautiful "Bridal Veil" nebula in the constellation of Cygnus, the Swan.

THE STARS

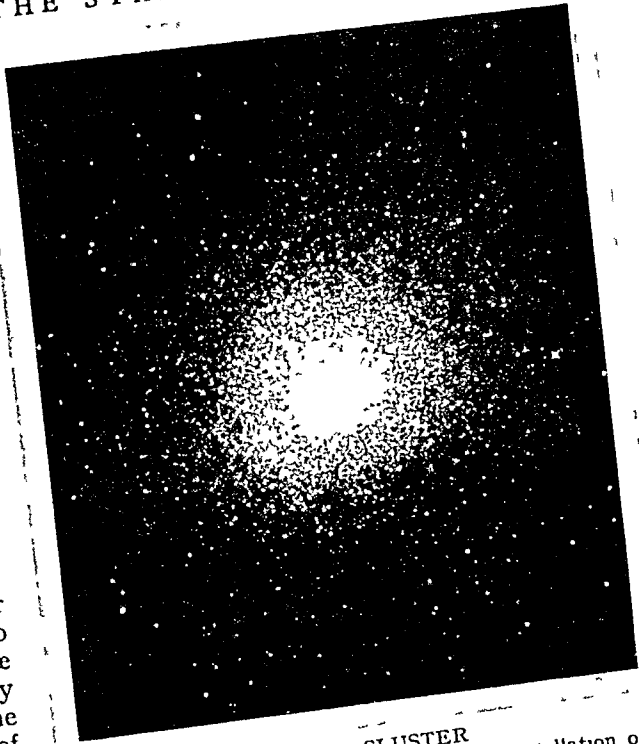
The Nebulæ.

Scattered about the heavens are a class of objects that in the telescope look like misty patches of light. These are the *nebulæ*, or "little clouds," some of which were seen by the ancient astronomers. Some were studied by Galileo, who came to the conclusion that they were clusters of stars so far away that the individual stars of the cluster could not be distinguished (or "resolved," as it is called) by the telescopes of that time.

The great astronomer Herschel was the first to suppose that the *nebulæ* were not all of a starry nature, and that some were gigantic clouds of glowing gas. This suggestion led to much discussion and argument, and in the attempt to settle the matter much attention was paid to these objects, after observer endeavouring to show that they were star clusters as Galileo had said. Nor were the efforts confined to observers, for every telescope maker tried to produce instruments of sufficient power and optical qualities that would resolve all the *nebulæ* into star clusters. It was left to Sir William Huggins to prove (in 1864), with a wonderful instrument called the spectroscope, that all the *nebulæ* could not be clusters of stars, and that some at any rate were composed of glowing gas as Herschel had said.

The *nebulæ* have been called "the workshops of the Creator," for here, it is believed, new stars and new star systems are being formed.

As we have mentioned, a few of the brightest *nebulæ* are visible to the naked eye. Many more can be seen



A STAR CLUSTER

This stupendous cluster of stars is in the constellation of Hercules. Our photograph, which was taken with the 60-inch telescope at Mount Wilson, was exposed for no less than eleven hours

with a small telescope, but by far the greater number can be studied only by photography. The first photographs of *nebulæ* were taken by Henry Draper, of New York, in 1880. Since that time thousands of photographs have been taken and an immense number of these objects have been revealed. It has been estimated that with only an hour's exposure about 300,000 *nebulæ* could be photographed with the 60-inch reflector of Mount Wilson. There would be a much greater number within the range of the 100-inch telescope, and the number revealed by giving longer exposures is enormous. Although many of the *nebulæ* are of a spiral form, there are many others of diverse shapes. They are all most beautiful objects.

It is now well established that there are also many dark *nebulæ*, which

do not shine. These non-luminous clouds of gas are only detected because they obscure the stars that lie behind them. Some of the best known of these dark nebulae are found in the constellation of the Southern Cross. Because the absence of the stars that they obscure can be noticed by the naked eye, sailors have named the black parts the "coal-sack."

The Milky Way.

On a clear night we can see a faint band of misty light stretching overhead. It is of irregular width and outline and is called the Milky Way. Aristotle supposed it to be due to the atmospheric vapour, and Anaxagoras thought it was the shadow of the Earth in the sky. When Galileo observed it with his telescope he saw that it was of a different order altogether, and that it was composed of myriads of faint stars so far away from us as to be indistinguishable separately to the naked eye. Much of our present knowledge of the Milky Way is due to the late Professor E. E. Barnard, who first successfully photographed it at the Lick Observatory in 1889. He used a special lens that "covered" a large area of the sky, and that had a great "light grasp" enabling the images of even very faint stars to be recorded. Professor Barnard took hundreds of photographs, exposing his plates for over seven hours. These photographs showed the Milky Way in its true nature. It was found to consist literally of clouds of stars, which in some places are so numerous that it is impossible to distinguish them separately even in the photographs.

Sir William Herschel suggested that the stars in space are grouped in the form of a flattened disc, something like a thin watch. Within the Milky Way are many star clouds, but how many of the individual stars belong to these clouds we do not yet know. One of these star clouds is of particular interest to us, for our own star, the

Sun, is almost in the middle of it. This accounts for the fact that the number of the stars increases towards the Milky Way, where, as it were, we are looking through the full length of the disc where the stars are thicker in number.

The Smallness of the Earth.

Astronomy has taught us many things, not the least important of which is to realise our comparative insignificance. Some people are accustomed to think of their individual importance; others think of the importance of their city, or the importance of their country, in the world's affairs. At one time the world's cleverest men thought the Earth was the centre of the Universe.

Astronomy has changed all this, however, and we have come to understand that the Earth is but one of seven other planets circling round a comparatively huge Sun; that this Sun is but a star—one of hundreds of millions of other stars, many larger and brighter than it is—embedded in a huge star cloud, which itself is only one of many such clouds that are included in the Milky Way. We know that our Sun is no more favourably placed than any one of 10,000 other suns in the same star cloud, and that we do not occupy any particularly favourable position in the Universe.

Realising all these material facts, we cannot help our thoughts being led in another direction. We realise there can be only one explanation of all these wonders—"the heavens declare the glory of God; and the firmament sheweth his handiwork."

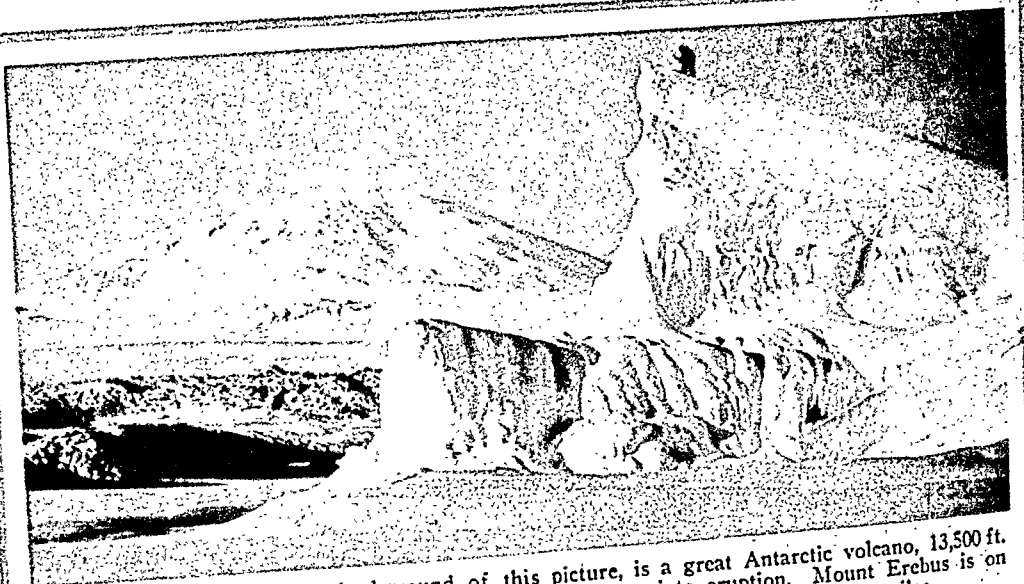
With the Psalmist we are tempted to ask—
 "When I consider Thy heavens, the work of Thy fingers,
 "The Moon and the Stars which Thou hast ordained;
 "What is man that Thou art mindful of him?
 "And the son of man, that Thou visitest him?"

SOUTH WITH CAPTAIN SCOTT



The photographs in this section are reproduced by permission of Herbert G. Ponting, F.R.G.S.
Captain Robert F. Scott, the British explorer, was born in the County of Devon. He possessed in a marked degree the organising ability indispensable to the leadership of a great scientific enterprise. He took the most keen and kindly interest in all about him, and his prominent characteristics were determination, self-reliance and inherent modesty. He was always quick to appreciate and generous to praise.

AN ICEBERG LIKE A CASTLE



Mount Erebus, seen in the background of this picture, is a great Antarctic volcano, 13,500 ft. in height. It is always smoking and sometimes it bursts into eruption. Mount Erebus is on Ross Island and this photograph was taken from a distance of fifteen miles.



The iceberg illustrated above was broken by the waves and a large portion of it was sheared off and drifted away. Of the remainder, it was so washed by the seas that its sides were worn into the semblance of an old Norman castle. It was called by the explorers "The Castle Berg."

ALADDIN'S CAVE AMIDST THE ICE



The action of the waves frequently wears caves and caverns even into icebergs. Then, if one can get inside, one is rewarded by a most beautiful sight. The entrance is always fringed by great icicles, upon which the sun shines brightly, so that with the crystal walls the caverns become fairy grottoes. You can imagine the sunlight dancing through this entrance

FURROWS THAT FOLLOW A BLIZZARD



In the Antarctic the spray from sea waves beating against the rocks is tossed high into the air; and, as it falls back, it instantly freezes. It does not fall evenly, however, and so freezes in furrows several feet in depth. It is impossible to travel over such places until snow falls.



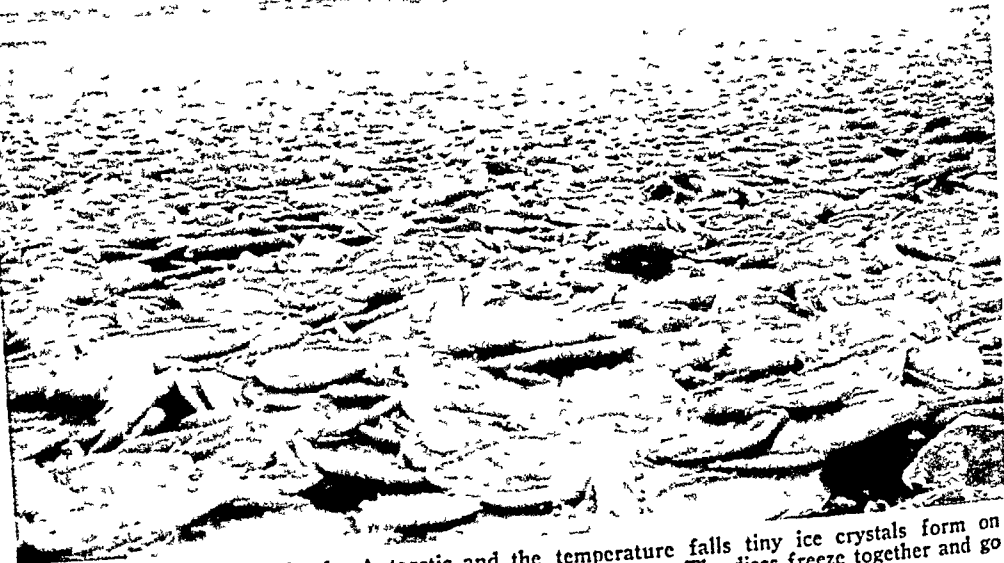
Sometimes when travelling across tracts of frozen sea upheavals of ice known as "pressure ridges" are encountered. In this picture the upheaval is probably due to the pressure exerted by the slow advance of the land glaciers seen in the distance.

A SLEEPING-PLACE FOR WEDDELL SEALS



Though seals find their food in the sea, they have to come on to the ice or the land to sleep, which they frequently do for forty-eight hours at a time. Whilst they sleep, they are to be seen on the lee side of a rock or iceberg, protected from the wind, as shown in this photograph.

"PANCAKES" A YARD ACROSS



When the sea is smooth in the Antarctic and the temperature falls tiny ice crystals form on the surface in the shape of thin discs as large as a shilling. The discs freeze together and go on increasing in size until they become what explorers call "pancakes"



Captain Scott's famous ship "Terra Nova" moored to the sea-ice off Ross Island. The iceberg in the foreground was gradually drifting nearer; but, fortunately, the wind changed and the berg moved out to sea, to everyone's relief.

THE ADELIE PENGUIN AT HOME



The Adélie Penguin is only found in the Antarctic. It stands 20 ins. in height, with black back and snow-white breast.



These Penguins nest on the rocky ground and here we see one of the birds turning her two white eggs to ensure even warmth.



Heavy snow may fall, even during the breeding season, and then the Penguins become completely snowed up in their nests.



Penguin chicks are kept warm by fluffy, grey-black down. After a fortnight they are too large for their parents to cover.

CAPTAIN OATES AND THE PONIES



When the sea-ice begins to break in the spring, lakes form and sometimes explorers have to pull their sledges over open lanes of water which separate the ice rafts. This work is fraught with no little risk.



Captain Oates is seen here in charge of the Siberian ponies in the "Terra Nova". He was the gallant officer who walked to his death in a blizzard rather than be a burden to his comrades. It was a most sublime sacrifice on his part.

True Tales
of
High
Adventure



Pioneers
by
Land and
Sea



Specially drawn for this work
At the end of a sumptuous dinner the Polos put on their travel-stained clothes in which they had arrived. Then with sharp knives they ripped up the seams and out fell rubies, diamonds, sapphires and emeralds of great value. Soon people were crowding round to welcome the long-lost travellers.

A WONDERFUL JOURNEY TO CHINA

AMONG the people who landed on the quays of Venice one day in 1295 A.D. was a small group of three men. Two of the three were old and worn with travel; the third was in his forty-first year and still upright and alert.

Though natives of the place nobody recognised them as they passed through the streets towards their home. Nor can this be wondered at, for the three men—Nicolo Polo, Maffeo Polo, his brother, and Marco Polo, his son—had left Venice twenty-four years before and not set foot in the city since.

The Long-lost Travellers.

Even when they made themselves known their relatives and old friends would hardly believe them, having long given them up for lost among the wild tribes of Central Asia. So the Polos invited them to a sumptuous dinner, at the end of which they put on the travel-

stained clothes in which they had arrived. Then with sharp knives they ripped up the seams, and out fell rubies, diamonds, sapphires and emeralds of great value. The sight of such wealth swept away any remaining doubts, and soon people were crowding to welcome the long-lost travellers.

But, though convinced that the Polos were the Polos, people began to shake their heads over the stories which these three, returned as it were from the dead, brought with them. "What is this we hear," they said to each other, "about stones that people dig from the earth and burn; and wool which will not burn; and water which takes fire; and a creature with feet like an elephant and a horn on its forehead; and serpents with feet and great jaws; and stags that people drive; and sheep with huge horns feet across?"

We can imagine them winking and placing a finger slyly on the side of the



Specially drawn for this work.

Whilst he was in prison Marco Polo wrote down his adventures. But for his imprisonment we should have lost one of the most interesting books of travel ever written, which has established the fame of Marco Polo as the greatest explorer the world has yet produced, with the possible exception of Columbus.

nose. Travellers' tales, indeed! Yes! and harder to swallow even than most.

The Polos had been telling them of things unknown to Europeans—coal, asbestos, petroleum, the rhinoceros, the alligator, the reindeer, and the great Asian mountain sheep which naturalists long after named *Ovis Poli*, in honour of its discoverers.

With Fire and Sword.

Three years later Marco took part in a sea fight with the Genoese, was captured and put in prison. While he was there people got to know of his travels, and through sheer weariness of relating his adventures to one visitor after another he wrote them down. But for his ill-luck we should have lost one of the most interesting books of travel ever written, which has established the fame of Marco Polo as the greatest explorer the world has yet produced with the possible exception of Columbus.

We will now glance at what the travellers had been doing during their long absence from home.

In 1260 the two elder Polos, while in the Crimea on a trading journey, had fallen in with an embassy being sent to Kubla Khan, Emperor of Northern China, and grandson of the terrible Genghis Khan, who had wasted Asia and much of Europe with fire and sword. Travelling with the embassy they reached the royal court, and soon were heading for Europe again with a request to the Pope that 100 teachers of the Christian religion should be sent to convert the Khan's subjects.

Chinawards Once More.

In 1271 they started Chinawards once more, without the 100 teachers, whom the Pope unfortunately could not provide—the whole history of the world might have been different had they been forthcoming—but accompanied by Marco, a lad of seventeen years. After four years of travel through Armenia, Persia, Afghanistan, the great table-lands of Central Asia, Turkistan, and the Gobi Desert, they reached the



Specially drawn for this work.

In the year 1271 the Polos started Chinawards once more. After four years of travel through Armenia, Persia, Afghanistan, the great tablelands of Central Asia, Turkistan and the dreaded Gobi Desert (illustrated above) they reached the Summer Palace of Kubla in the Kinghan Mountains.

Summer Palace of Kubla in the Kinghan Mountains. He was delighted to see his old friends again and heaped honours upon them. But a double share fell to Marco, who, like Joseph in Egypt, soon became the ruler's right-hand man. Kubla despatched him to all parts of his dominions to gather information about any marvels and strange customs that he might come across. So well did Polo carry out the work that he was sent even further afield, to Cochin China and India, with his notebook.

Cities of China.

This went on for seventeen years, in the course of which Marco's mind became stored with the wealth of detail afterwards committed to paper. He made notes of the animals and minerals of the country, of the wonderful Summer Palace already referred to, of the

even more marvellous Winter Palace at Cambaluc (Pekin), of the huge cities of China, of the vast canal system, of burial customs, and so on.

Bearers of Presents.

Presently homesickness attacked the Polos, and they begged to be sent home. But the Khan would not release them until, by a happy chance, he needed an escort for a lady destined to be the bride of the King of Persia. She must go by sea, and the Polos, as born sailors, were entrusted with the duty of delivering the princess safe and sound to her future husband.

Laden with costly presents, and under promise to return in a few years' time, they left China and in due course reached Persia, there to hear that the King was dead. So they handed their charge over to the new monarch—who married her—and crossed Persia and

Armenia to Trebizond, on the Black Sea, whence they sailed to Venice.

The value of Marco Polo's narrative is made all the greater by the accuracy with which he describes things familiar to us, but quite strange to him. What fault, for example, can be found with his description of coal?

Released from Prison.

"Through the whole province of Cathay they dig certain black stones from the mountains which run in veins. When put into the fire they burn like wood, and being kindled they preserve fire a long time, for if lit in the evening they keep fire all the night. These stones do not flame when first lighted, but during their burning they give out a great heat."

Some of his stories are obviously absurd, but in most cases they relate to

things of which he had only heard, not seen, and so had been unable to verify.

Eventually Polo was released from prison, and he returned to Venice to find himself nicknamed "The man of millions," because he often used the word million in speaking of things Chinese.

To the very end many folk did not take him seriously, and on his deathbed he was asked to deny many of the statements in his book and so ease his conscience. "No!" said the dying man, in firm determination. "I have not told even the half of the things that I have seen."

And we can believe him. The story which he dictated during his confinement was first written down in the French language, but before many years had passed it was translated into other tongues.



The two elder Polos fell in with an embassy being sent to Kubla Khan, Emperor of Northern China. Travelling with the embassy, they reached the royal court. *Specially drawn for this work.*

THE STORY OF IBN BATUTA



Specially drawn for this work

After roaming about Asia Minor, Ibn Batuta journeyed up the Volga to Northern Russia, where he was much impressed by the sledge dogs used in that country.

It is very likely that you have never heard of a certain Moor of Tangiers, named Ibn Batuta, who lived in the fourteenth century. Yet this man is worthy of inclusion among the world's great explorers, for during twenty-eight years of almost continuous travel he covered a distance of at least 75,000 miles, equal to three complete circuits of the earth at the equator. Despite the great advantages that modern explorers enjoy in means of transport, food supplies, and scientific instruments, it is doubtful whether any one has approached Batuta's mileage.

Across the Arabian Desert.

Batuta left Tangiers in 1324 A.D., the year of Marco Polo's death, and made a pilgrimage to Mecca, travelling overland through North Africa, Egypt, and Syria. He then crossed the Arabian desert to Baghdad, and after a rest there sailed down the Red Sea and the east coast of Africa to Mombasa. Turning eastward, he made for Southern Arabia, where he first saw a palm bearing a nut "like a man's head, with something like two eyes and a mouth, and fibre-like hair outside, from which men make cords and ropes." His description of the coco-nut is accurate enough; but he fails in his natural history when he pronounces pearls

to be the sun-hardened bodies of oysters!

His Journey to Mecca.

From the Persian Gulf the Moor returned to Mecca, and crossing the Red Sea he descended the Nile to Cairo. After roaming about Asia Minor, he journeyed up the Volga to Northern Russia, where he was much impressed by the sledge dogs used in that country. Constantinople next attracted him, as the capital of the Eastern Roman Empire. Having paid his respects to the Emperor, he set off on a journey through Persia and Afghanistan to India. We may well doubt the story that he picked up on the way an aged man living in the Hindu Kush Mountains who was 350 years old, and grew a fresh set of teeth every 100 years; though he was no doubt correct in his statement that the Afghans were great robbers of travellers.

Arrived in India Batuta took service with the Emperor Mohammed Muglak, at Delhi, then by far the greatest city in Hindustan. While there he noticed many of the customs of the country, including that of *suttee*, which practically compelled a widow to throw herself on to the funeral pyre of her departed husband.

Batuta got mixed up with a conspiracy and narrowly escaped execution. But he managed to regain his royal master's favour sufficiently to be sent on a mission to the Emperor of China. At Calicut he embarked, with all his luggage and the many presents entrusted to his care, on Chinese junks, propelled then, as now, by mat-like sails.

Some of the vessels would hold 1,000 men, and the houses and gardens on their decks gave them the appearance of floating towns. When a calm came on huge oars, each handled by no fewer than twenty-five men, were resorted to.

Adam's Footprint.

Unfortunately the ship carrying the presents was sunk during a storm. Not daring to face the Emperor with the news, Batuta resumed his independence, took part in various military adventures, and visited Ceylon. While on the island he climbed Adam's Peak, to see the footmark on the top made by Adam when he stood there for 1,000 years on one foot as a penance, after his expulsion from Eden. Batuta gives its length as eleven spans—about 8 feet.

Our restless traveller, being now seized with a desire to visit the East Indies and China, took ship once more, called at ports in Java and Sumatra, and presently found himself at the great Chinese port of Chinchew. The most interesting thing that he has to tell us of China is the great care taken of travellers, who could journey in perfect safety even if known to be carrying much valuable baggage or property with them.

Inns were under the charge of a magistrate, responsible for all travellers who stayed there. When a traveller left an inn a messenger was sent to fetch back a "receipt" of his safe arrival at the next inn. Should anything go wrong the magistrate proved to be at fault found himself in prison for an indefinite period.

A Journey to Timbuctoo.

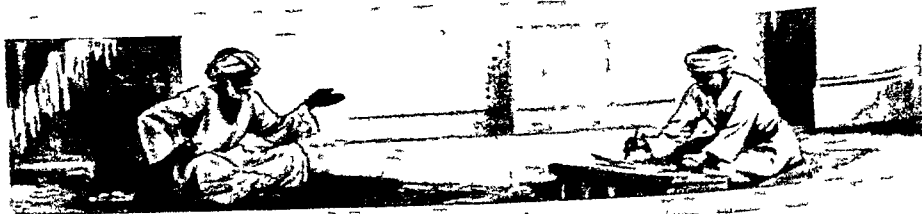
At Pekin Batuta witnessed an exhibition of a feat similar to the famous rope-trick that Indian jugglers are reputed to do to-day. A strap was thrown into the air and a lad climbed up it and disappeared, to reappear presently among the audience. Batuta was so overcome by the sight that he fainted, though assured that the whole thing was trickery.

In 1349 the Moor was back in his native land. Like Marco Polo, he had been absent twenty-four years. But he had not yet done with travel, for he crossed into Spain, returned to Africa, and traversed the Sahara to the River Niger, down which he sailed to Timbuctoo. His wanderings ended with the return journey home.

Put into Writing.

Hearing of his travels, the Sultan of Morocco ordered Batuta to dictate an account of them to the royal secretary. What was written down fell, centuries later, into French hands, and so became known to the world at large.

How much poorer the world would be to-day if it were not for the writings of these old-time travellers, who made their long journeys in face of difficulties we can scarcely imagine.



COLUMBUS AND THE NEW WORLD



CHRISTOPHER COLUMBUS AT THE COUNCIL OF SALAMANCA

This illustration, reproduced from the famous picture by Professor N. Barabino, shows Christopher Columbus sitting in an attitude of hopeless despondency because the members of the Council of Salamanca would not accept the theories he put forward. Salamanca in those times contained one of the greatest universities on the Continent. Later than the period of this painting Columbus lectured before the Council on his travels and discoveries.

In the 15th century a famous geographer of Florence, named Toscanelli, drew a map of the Atlantic Ocean and the countries to east and west of it. You would think it a very queer map. On the east appeared the coast of Africa as far south as it was known. In the middle of the ocean he placed a large island, St. Brandan, which was supposed to be there. On the west side a much larger and square-cornered island, Cipango (Japan), lay off the coast of Cathay (China), which sloped south-westwards and ran into that of India. Dotted about in the south-western part of the ocean were many islands, representing what we call the East Indies.

Islands of Spices.

Toscanelli no doubt based his map partly on the information brought back from Asia by Marco Polo and other travellers, partly on reports that passed from mouth to mouth among seamen, and partly on his imagination. At any rate, he seems to have believed that a voyage of about 3,000 miles made west-

wards from Europe would bring a ship to the coasts of Asia and the islands from which spices came to Europe. And we must bear it in mind that Toscanelli was a great authority on such matters. Therefore what he believed would be accepted readily by the ordinary sailor.

It is easy enough for us, who *know*, to laugh at the Italian's mistakes. But should we have done any better in his position? The width from west to east of Europe and Asia had never been measured, and the earth was thought to be about 20,000 miles round at the equator instead of its actual 25,000 miles. So you see that there was room for an error, running into several thousands of miles, cutting out that part of the world in which the Americas lie.

About 100 years before this map was drawn, an Icelandic priest, John Thorharsen by name, had written his *Flateyrbok*, in which are described the early voyages of the Norsemen. This book, probably unknown to Toscanelli, relates how in the year 1,000 A.D.—a convenient date to remember—a Viking ship departed from a colony in Green-

land, and, sailing westwards, reached a barren country, which doubtless was Labrador. There being no attraction here, the crew coasted southwards, and presently came to a land where vines grew. This was named Vinland.

Several expeditions were sent afterwards to this new land, and attempts were made to settle colonists in it. But quarrels among themselves and attacks by the natives caused the Norsemen to withdraw altogether in 1013. Thus, though to them is undoubtedly due the credit of first discovering America, the discovery had no useful results; and nearly 500 years had to pass before Europeans again reached the New World.

The Great Sailor of Genoa.

In 1470 there came to Portugal a Genoese sailor, named Cristoforo Colombo. The Portuguese spoke of

him as Christovao Colombo; to the Spaniards he was Cristobal Colon; and to us he is Christopher Columbus.

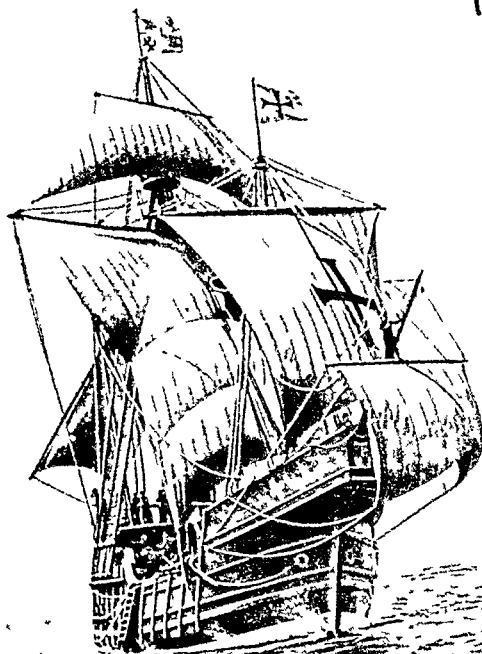
Christopher was at the time a man of whose life twenty-one years had already been spent on the sea. Of adventures, including sea fights, he had had many. But he was no rough sailor. As a lad he had studied astronomy and navigation at the University of Padua, to fit himself to roam the seas in search of those distant lands which were the topic of talk wherever seamen gathered.

Three years after his arrival at Lisbon Columbus married a Portuguese lady, and went to live on her estate in the Madeira Islands. While there he heard of the expeditions sent by Portugal down the African coast. Why not, he asked himself, try to reach India by sailing across the great ocean named after the Atlas Mountains in North-West Africa? He put his scheme before



COLUMBUS BEFORE FERDINAND AND ISABELLA

One of the most glorious days in the life of Columbus was when he was received by King Ferdinand and Queen Isabella on his return to Spain. He gave a great display of gold and jewellery, plants, birds, animals and even a native man and woman. When the king rode abroad Columbus, now ennobled, often rode beside him. Our picture is taken from the painting by the artist Balaca.

A.D.
1492

Rischgitz

AN OLD-TIME SHIP RE-BUILT

To celebrate the 400th anniversary of the discovery of America, there appeared, in 1893, on the waters of Lake Michigan, a full-sized model of Columbus's ship, *Santa Maria*. This re-constructed vessel is depicted above. She was built in Spain from the original design for the ship and sailed across the Atlantic. She was about 65 feet in length at the keel.

Toscanelli, who drew for him the map that has been described, and expressed his approval.

To increase his knowledge Columbus sailed to the Gold Coast of Africa, and voyaged northwards to Iceland. There he might have learned of the Norsemen's exploit centuries earlier; but it is very unlikely that he did so as he never refers to the matter in his letters.

Ferdinand and Isabella.

Then he approached King John II. of Portugal. John listened, but his geographers ridiculed the proposal, though they did not convince the king. At the suggestion of the Bishop of Ceuta, John stooped to what we should

call a very mean trick. "Send out a ship secretly," said the wily Bishop, "with Columbus's charts, and find out whether there is anything in this Italian's scheme. If you succeed you will save the high price he asks for his services."

The ship was sent, but its captain soon lost heart and returned home. Columbus got to know of the voyage; and, furious at John's deception, went to the court of the Spanish monarchs, Ferdinand and Isabella. Here he was received so coolly that, in 1487, he sent his brother Bartholomew to the courts of Henry VII. of England and Charles VIII. of France. Henry, a somewhat cheeseparing man, was frightened by

the expense of an expedition, and while he hesitated Isabella sent for Columbus.

After years of waiting and disappointment, an agreement was drawn up between the queen and the sailor. Columbus was to be admiral and Viceroy of all continents and islands he might discover; to have one-tenth of all articles bought or found in his dominions; and to receive one-eighth of the profits of the expedition. Isabella undertook to fit out the ships and provision them.

From the Port of Palos.

Three ships were provided, the *Santa Maria*, the *Pinta* and the *Niña*. The first was the largest, and the flagship; the other two were open and undecked. There is something interesting to be said of the *Santa Maria*. When the great exhibition, the World's Fair, was opened at Chicago in 1893, to celebrate the 400th anniversary of the discovery of America, there appeared on the waters of Lake Michigan a full-sized model of the *Santa Maria*, built in Spain from the original designs for the ship, and sailed across the Atlantic. She was about 65 feet long at the keel, displaced 233 tons of water, and carried three masts, the forward two of which were square-rigged. On her bows rose a great structure, the fore-castle, and her stern was similarly laden with a towering poop. No wonder that these old ships were clumsy sailers and rolled terribly.

No cheers were heard in the port of Palos when the three ships weighed anchor on August 3rd, 1492, but there were tears and lamentations in plenty. Those ashore had relatives aboard; of those aboard many were downhearted at the prospect of a voyage into the unknown; and all knew that the ships were not suited to the task ahead.

By the time the Canary Islands were reached the ships had begun to leak badly, and for nearly a month they were kept busy repairing them. Not until September 6th was Columbus

able to head westwards across the ocean into regions never yet navigated by a ship.

The sailors had already been terrified by the sight of Teneriffe in eruption, and when a calm came on and held up the ships they regarded it as a sign from Heaven that they should go no further. Favourable breezes followed the calm, and the crews, we are told, then wept like children at the thought of leaving land far behind them. Columbus tried to still their fears with stories of the great rewards that would attend success; and, in the logbook which he allowed the crew to see, entered a smaller number of miles than those actually covered—and noted in his private log. The seamen then noticed that the compass was behaving strangely, pointing more and more to the west of the Pole star. Columbus, though he did not know the reason for this, produced an explanation which satisfied the men.

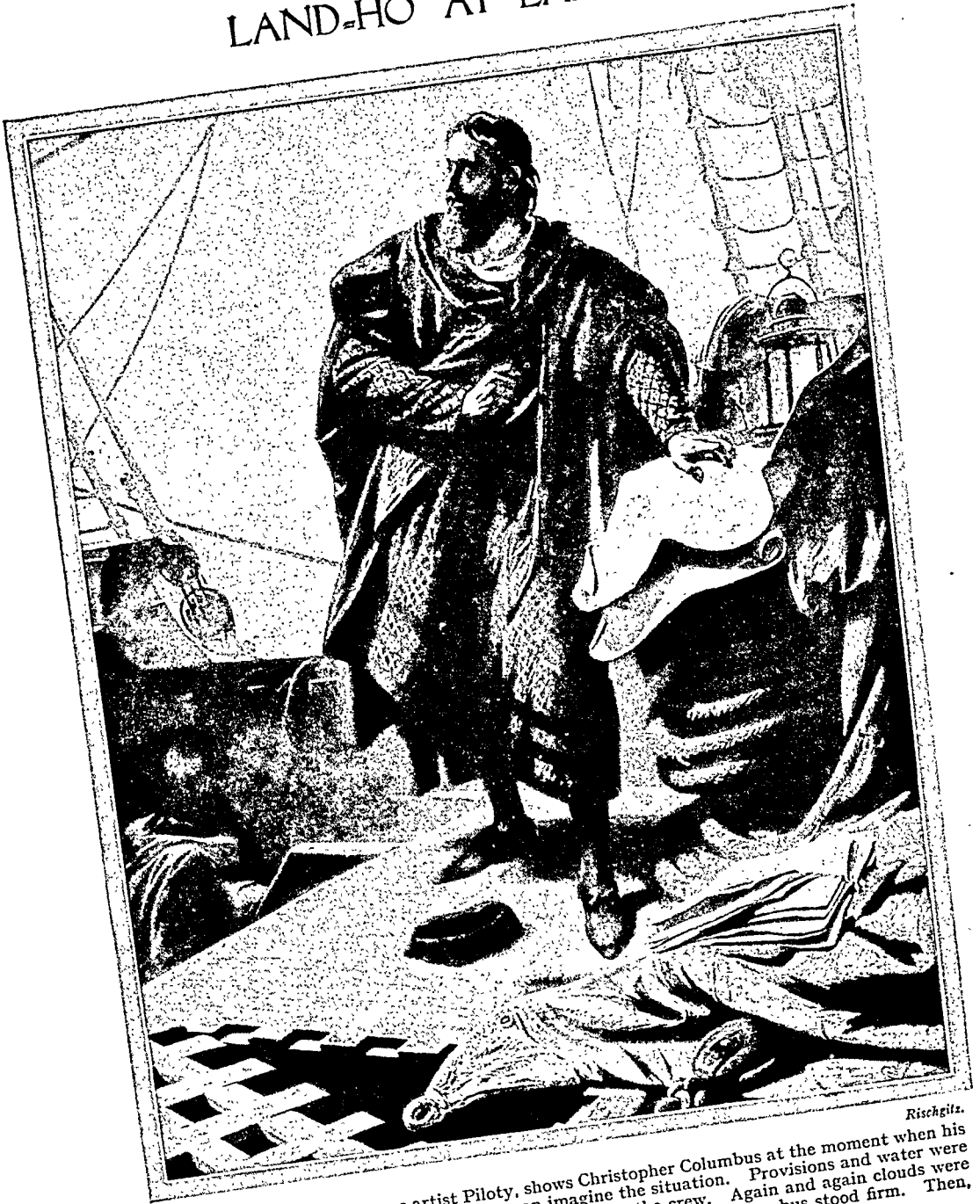
Presently the ships caught the trade winds and were carried steadily westwards till they struck the Sargasso Sea, where the Spaniards found themselves becalmed among great floating masses of weed. Provisions and water were now running low, and the general discontent would have broken out into mutiny had not a wind sprung up and carried the ships westward once more.

Columbus Goes Ashore.

Again and again clouds were mistaken for land. Renewed disappointments made the men demand a return to Spain. But Columbus stood firm, and he was helped by the appearance of birds, a floating branch of a tree with berries, and a stick having carving on it. These signs could mean only one thing—that they were approaching land.

On October 12th, when day dawned, land was seen a few miles ahead. Dressed in his richest clothes and carrying the royal standard, Columbus went ashore. As soon as he touched land he

LAND-HO AT LAST!



Rischgitz.
This picture, by the famous artist Piloty, shows Christopher Columbus at the moment when his ship came within sight of land. We can imagine the situation. Provisions and water were running very low and discontent was growing among the crew. Again and again clouds were mistaken for land. The men demanded a return to Spain, but Columbus stood firm. Then, on October 12th, when day dawned, land was seen a few miles ahead.

fell on his knees and, after giving thanks to God, took possession of the land in the names of Ferdinand and Isabella. His men, changed from despair to joy, readily swore the oath of obedience to him as Viceroy.

The island—for such it proved to be—which they had struck was Watling Island, one of the Bahamas. Columbus named it San Salvador—the Holy Saviour.

The white men and the copper-coloured natives of the island were greatly interested in each other; and the Spaniards' attention was soon attracted by the gold rings worn by the natives. Here, they thought, was a foretaste of the gold which they hoped to find in abundance.

The Hero's Return.

For a few days the fleet cruised about among the Bahamas, imagined by Columbus to be islands off the coast of China. Then it sailed southward to Cuba, which delighted Columbus by its lovely scenery. Here Pinzon, captain of the *Pinta*, deserted and headed for Spain, to get credit for the discovery of the Indies.

Columbus sailed on and found another great island. He named it Hispaniola—Spanish Land. Its more modern names are Hayti and San Domingo.

A disaster now overtook the explorer. His ship ran ashore and was wrecked, and he was reduced to the *Niña*. As she could not hold two crews, Columbus built a small fort from the timbers of the *Santa Maria*, mounted some guns in it, and left forty men to garrison it. He then set sail for Spain.

On the way home he fell in with the *Pinta*, and thought it prudent to accept the captain's feeble excuse for his desertion. A little later the two ships ran into a terrific tempest. Columbus believed that the end had come. He enclosed a short account of his voyage in a lump of wax and threw it overboard; and placed a duplicate in a

barrel on the poop, where it would float if the ship sank.

But the vessels weathered the storm, and on March 15th, 1493, the people of Palos were overjoyed by the sight of two small ships, long regarded as lost, sailing into the harbour.

Then came the most glorious days of Columbus's life. He entered Barcelona, where the King and Queen awaited him, in triumph, preceded by a great display of animals, birds, plants, gold and jewellery. The people cheered him to the echo; the sovereigns rose to receive him, and then knelt in prayer while the royal choir sang the *Te Deum*. When the King rode abroad Columbus, now ennobled, often rode beside him.

But grievous times were ahead, for jealousy soon began to work against him. Three more voyages he made, in the course of which he discovered Trinidad and sighted the coasts of South America. During the second of these voyages he was thrown into chains by rivals and sent back to Spain a prisoner. Though released at once he found that he had fallen from favour, and after the death of Isabella Ferdinand turned the cold shoulder to him. Worn out in health, the great man died in 1506, believing that Cuba was a promontory of Asia, South America an island, and the Isthmus of Panama the Malay peninsula, past which there was a way to India.

Even if the Vikings are left out of account Columbus was not the first man to see the American mainland. For John Cabot, a Venetian, who had settled in England, sailed from Bristol in 1497, and on June 24th sighted the coast of Newfoundland or Labrador, more than a year before Columbus got a glimpse of South America.

How America got its Name.

In the year that Cabot left England an Italian, Amerigo Vespucci, sailed from Cadiz, and explored American coasts from Yucatan northwards to Chesapeake Bay. The following year

THE LANDING OF COLUMBUS



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It is scarcely to be wondered at that after the many perils and privations through which he had passed and in the very hour of his triumph at finding land to the west of the Atlantic Ocean, Christopher Columbus should wish to give heartfelt thanks to Almighty God. Dressed in his richest clothes and carrying the royal standard the explorer went ashore. Then, as soon as he touched land, he fell on his knees; and, after praying earnestly, took possession of the country.

A NATION'S HERO IN CHAINS



Rischgitz.
Christopher Columbus, like many another great man, did not always find himself in high favour; and actually passed through grievous times, for jealousy worked against him. Indeed, on one of his later voyages, he was thrown into chains by rivals and sent back to Spain a prisoner, as is pictured above in an engraving after the painting by C. M. A. Challe. Though Columbus was released at once, he soon found that he had fallen from his great position. Worn out in health, he died in 1506.



Reproduced by permission of the Artist

Rischgilt.

THE CABOTS SAIL FROM BRISTOL

This beautiful painting by Ernest Board hangs in the Bristol Art Gallery. It shows the departure from that great port of John and Sebastian Cabot on their first voyage of discovery in 1497. These merchant adventurers sighted the coast of Newfoundland or Labrador more than a year before Columbus obtained a glimpse of South America.

he sailed across the Atlantic to Brazil, which he struck near Cape San Roque. After some voyaging along the northern coast he returned to Spain.

On his third voyage, in 1501 and 1502, Vespucci explored the South American coast southwards past the Bay of Rio de Janeiro—the "January River," as it was entered on January 1st, 1502. From this point he sailed south across the open ocean hoping to pass round the continent, and eventually reached South Georgia, in the

same latitude as Cape Horn, and now a great whaling station. The cold here was so great that Vespucci turned back.

Vespucci gave his Christian name first to Brazil, which appeared on maps of the time as "America." Then the word was extended to the whole continent, and, later, to the northern continent as well. And despite all efforts to get Columbus's name on to the map, it has remained limited to Colombia, the central American state, the Columbia River and British Columbia.

THE FIRST VOYAGE ROUND THE WORLD



Specially drawn for this work
Ferdinand Magellan, a Portuguese nobleman, who was a skilled navigator, proposed to find a way round South America. On September 30th, 1529, the little squadron sailed from Seville Harbour.

WHEN Columbus brought back news to Spain, in 1493, of his discovery of what we call the West Indies, the King of Spain believed that he had reached the famous spice islands of the East Indies.

Great was the disappointment of the Spaniards when they found out their mistake; nor was it lessened when it became known that there was no way through the American Continent at or near the Isthmus of Panama.

By an agreement with the Portuguese, the Spaniards had to explore westwards only, and the Portuguese eastwards only. So that, unless a passage could be found through or round the New World, the Spaniards were cut off from the much-coveted islands whence spices came—the Moluccas.

With the King's Consent.

In 1516 there arrived at the Court of Charles V. of Spain a Portuguese nobleman, Ferdinand Magellan by name. Magellan was a skilled navigator, who had been treated so shabbily by King Manuel of Portugal, that he crossed the frontier in disgust and put a proposal before the Spanish ruler. His proposal was that he should be sent in

command of a fleet to find a way round South America, which he believed to end in the ocean just as Africa ended at the Cape of Good Hope.

Aided by powerful friends, Magellan won Charles' approval, and a formal contract was drawn up between the two parties. In it the King undertook to supply five ships, man them with crews, and provision them for two years; and to give the explorer part of the profits of the voyage, besides any two islands he might select out of those discovered by him.

On September 30th, 1529, the little squadron sailed from Seville Harbour. The tonnage of the five ships—*San Antonio*, *Trinidad*, *Concepcion*, *Victoria*, and *Santiago*—ranged from 120 down to 75. In other words, these vessels were much smaller than many modern steam fishing-boats.

They carried—among other things—two and a half tons of gunpowder; eighty-two cannon of various sizes; eighteen hour-glasses, to act as chronometers; sixty cross-bows, and 360 dozen arrows; and a ton of quick-silver. The last was for use in trading with natives, but it is difficult to understand what its particular attraction would be. Altogether, the fleet cost

THE FIRST VOYAGE ROUND THE WORLD 673

the monarch rather more than £5,000, a small enough sum in modern money, but a very considerable amount four hundred years ago.

Trouble began for the Commander before he had crossed the Atlantic. The captain of the *San Antonio* had to be put in irons for insubordination and replaced by another officer.

Anchored for the Winter.

Land was sighted on the Brazilian coast, down which the fleet sailed to the estuary of the Rio de la Plata. At first the Spaniards thought this would let them through to the "South Sea," as the great ocean they were seeking was then called. This idea proving incorrect, the fleet proceeded southwards to Port St. Julian, about 200 miles north of the entrance to the straits to which Magellan gave his name. Here it anchored for the winter.

Presently, provisions began to run short, and the sailors to grumble. They even begged the admiral to abandon the vain attempt to pass through an endless barrier of land and return to Spain. What were spices beside men's lives, they asked?

But Magellan took up a firm stand. The Emperor had given him orders, and he meant to carry them out. His determination brought matters to a head on Easter Day, 1520. To celebrate the feast, Magellan invited all his captains to dine with him. Quesada, of the *Concepcion*, and Mendoza, of the *Victoria*, kept away. Quesada went so far as to board the *San Antonio*, murder the pilot, imprison

the captain, and incite the crew to mutiny. As soon as Magellan discovered that three of his ships were in arms against him, he captured the *Victoria*, and drew it and the other two loyal ships up across the harbour mouth, shutting the mutineers in a trap. A few rounds from the guns brought surrender, followed by the execution of Quesada. Mendoza had been killed in action; and the third chief rebel, Juan de Cartagena, having been put ashore, the mutiny was quelled.



Specially drawn for this work.
Before the Atlantic Ocean had been crossed trouble began for Magellan. The captain of the *San Antonio* had to be put in irons for insubordination and replaced by another officer.

THE FIRST VOYAGE ROUND THE WORLD 675

of Zebu to swear fealty to Spain and to adopt the Christian religion, he visited another island, Matan. Its ruler, however, refused to follow his neighbour's example, and during an attack made with a small force to compel obedience Magellan was killed by the islanders. So perished, in a wretched skirmish with savages, a man whose feat of first leading vessels across the Pacific was greater even than that of Columbus.

All the Survivors.

The voyage was completed—by one ship, the *Victoria*, which on September 9th, 1522, anchored off Seville. She had on board eighteen men, the only survivors—except for those who had deserted with Gomez—of the 234 men who had sailed from the port just under three years before. The rest had died of disease or wounds, or were languishing in Portuguese prisons.

Elcano, captain of the *Victoria*, received the honours that otherwise would have come to Magellan. As Magellan's wife and only child were dead, there was no one else to receive them.

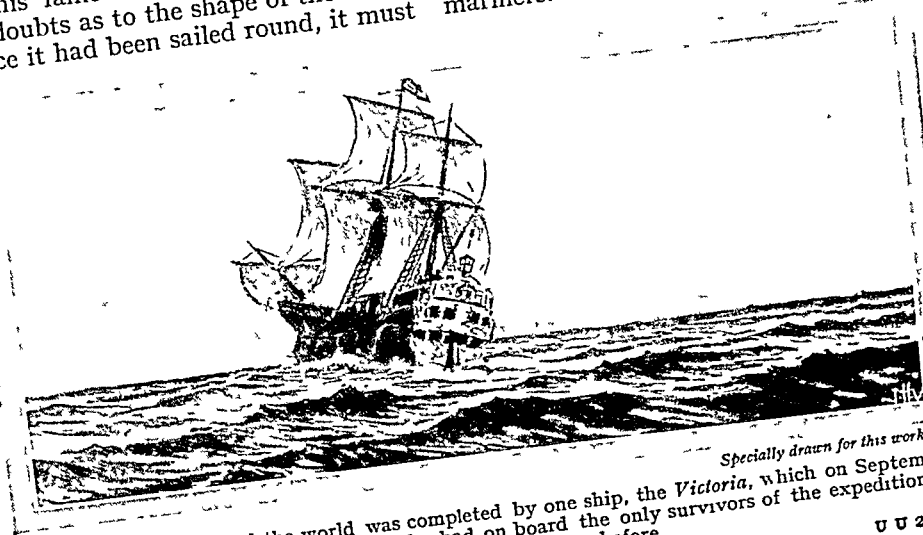
This famous voyage finally settled all doubts as to the shape of the earth. Since it had been sailed round, it must

be a sphere. The voyage also proved that a ship sailing westwards round the globe lost a day. According to the *Victoria's* log, home was reached on September 8th, though in Spain the date was September 9th. An astronomer was able to explain the reason of the difference to everyone's satisfaction.

If you take up your atlas and look towards the very tip at the bottom of South America you will see the Strait of Magellan and at once realise that it forms a link of water between the Atlantic and Pacific Oceans. To the north is the mainland of Chili, with Tierra del Fuego to the south. The Strait exceeds 350 miles in length. In parts it is very narrow, but little more than two miles across, so that there are many broader rivers. At other parts, however, it widens out to 17 miles.

Not until Magellan had been dead upwards of three hundred years was the Strait which bears his name thoroughly explored.

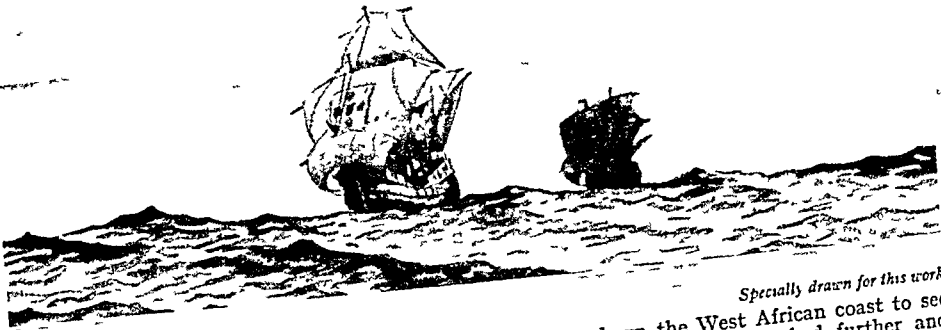
It will be obvious from the map that a ship passing through Magellan's Strait would be saved the perils of a voyage round Cape Horn, which has always had a bad reputation among mariners.



The first voyage round the world was completed by one ship, the *Victoria*, which on September 9th, 1522, anchored off Seville. She had on board the only survivors of the expedition, which had sailed three years before.

Specially drawn for this work.

DIAZ AND VASCO DA GAMA



Prince Henry of Portugal sent out ships to feel a way down the West African coast to see whether Africa could or could not be rounded. The brave captains pushed further and further southwards.

IN the middle of the fifteenth century Europe was beginning to recover from the misery and ignorance of the Dark Ages. Industry and trade awoke from a long sleep, and adventurous spirits were ready to explore the oceans in search of new countries and to gather the wealth of the East.

The Crusades had failed to crush the Moslems, who now for more than a century had been in possession of Palestine, Egypt and Arabia. Spices and many other good things from Asia could reach Europe only by passing through Mohammedan territory. The heavy tolls levied on them sent up their price greatly.

Riches of the Rulers.

Every traveller returning from Asia spoke of the great riches of its rulers and of the prizes awaiting any man bold enough to seize them. The way being barred overland, the only alternative was to reach Asia by sea. But the geography of the time pictured Africa as stretching southwards to the Pole; and the tropics were believed to be regions of flame, or at least of heat in which man could hardly live. So the task of discovering whether Africa could, or could not, be rounded was one before which the bravest sailor of those days well might quail.

Such was the state of things when Prince Henry of Portugal, whose skill as a seaman and love of exploration earned him the title of "The Navigator," began to send out ships to feel a way down the West African coast in the hope that the accepted geography might prove all wrong.

We cannot here follow the various fortunes of the brave captains who, from year to year, pushed further and further southwards. Let us be content to note that during Prince Henry's life Portuguese vessels got as far as the mouth of the Gambia River, about 2,000 miles from Portugal.

After the Prince's death exploration languished, though in 1475 two Portuguese captains crossed the dreaded tropics without suffering any ill-effects. But when John II. came to the throne in 1481 determined exploration was resumed. One of his men, Diego Cam, reached the mouth of the Congo in 1484, and Walfish Bay in 1485. Without being aware of it, Cam had almost sighted the end of Africa when he turned back.

About Bartholomew Diaz.

In August, 1487, two tiny ships left the Tagus under the command of Bartholomew (or, as we spell it, Bartholomew) Diaz, a Knight of the royal

DIAZ AND VASCO DA GAMA

household. The chief object of the expedition was to gather information about a mysterious Christian potentate, called Prester John, supposed to live somewhere in the interior of Africa.

The little ships crept slowly down the coast, setting ashore here and there natives who had been brought to Portugal by Cam. Their orders were to try to find Prester John and await the return of the fleet.

Diaz had passed the mouth of the Orange River when a great storm overtook him. Fearing the coast on his lee, he put boldly out to sea, and for fourteen days had no sight of land. The ships ran into bitterly cold weather, which numbed the crews till they could hardly work the ropes. At last the storm abated, and Diaz sailed north till he struck the coast at what was afterwards named Algoa Bay, since it became the regular port of call for ships bound to Goa—al Goa, in Portuguese—in India. During the storm the fleet had not only rounded the Cape but sailed 500 miles east of it!

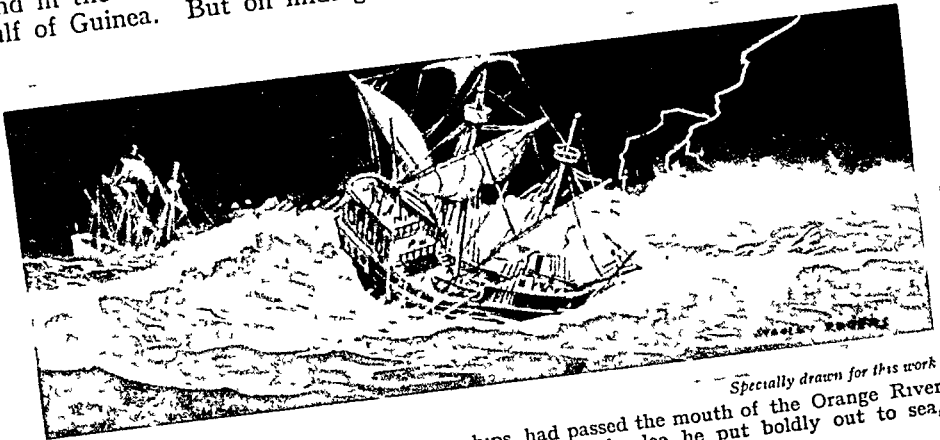
The wearied crews now clamoured for home so vigorously that Diaz had to give in to them. As the coast could be seen stretching eastwards, Diaz thought that there might be another bend in the coastline like that in the Gulf of Guinea. But on finding that

the coast ran due north when a mountainous promontory had been rounded, he felt sure that he had discovered the route to India. The Cape of Storms, as Diaz named it after his recent experiences, had been hidden from him by thick mists during his eastward voyage.

Rejoiced at his great discovery, Diaz hastened home, and was received with great honour by King John. "Let it be called, not the Cape of Storms," exclaimed the monarch, "but the Cape of Good Hope!" and by that name we know it to-day.

King Manoel the Great.

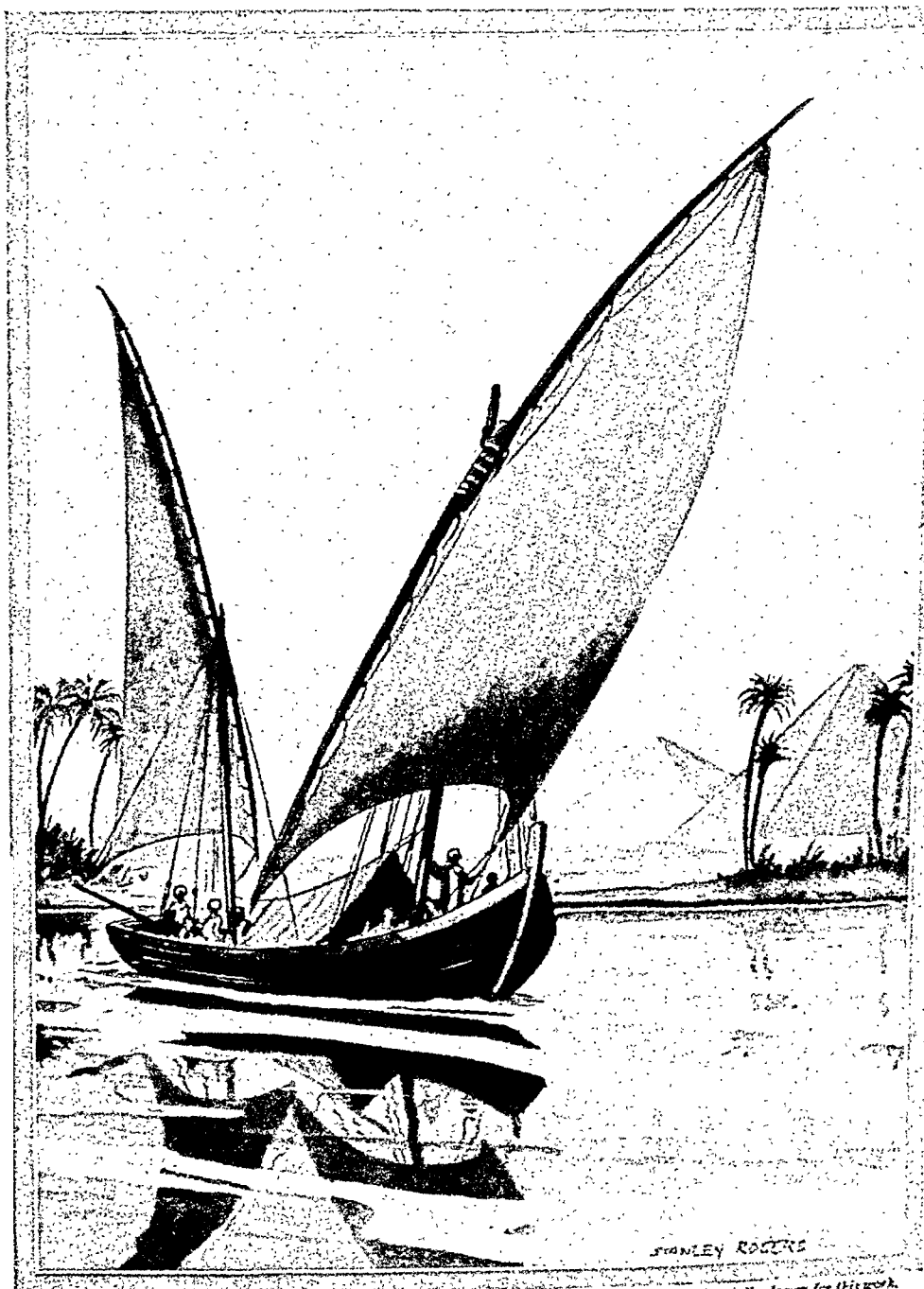
In the year of the discovery of the Cape two Portuguese explorers were sent, disguised as merchants, to Egypt to find out what they could about trade routes to India. They were also to hunt for Prester John. One of them ascended the Nile to Abyssinia, where he ran Prester to earth in the person of the Abyssinian monarch, and died. The other sailed down the east coast of Africa to Madagascar and returned to Cairo. There he learned of his comrade's death and found orders from King John to go to Abyssinia at once. He did so, after fortunately sending back by the messenger the valuable news that the Indian Ocean extended from Africa to India. Prester John



Specially drawn for this work
Bartolomeu Diaz, in command of two tiny ships, had passed the mouth of the Orange River when a great storm overtook him. Fearing the coast on his lee, he put boldly out to sea, and for fourteen days had no sight of land.

" BESIDE THE ETERNAL NILE "

SHELLEY



STANLEY ROBERTS

Specially drawn for this work.

Two Portuguese explorers, disguised as merchants, were sent to Egypt to find out what they could about trade routes to India. One of these merchants ascended the Nile to Abyssinia. Here we see the venturesome explorer and his vessel sailing along the placid river abreast of the Pyramids. Eventually the explorer made himself known to the Abyssinian King, Prester John.

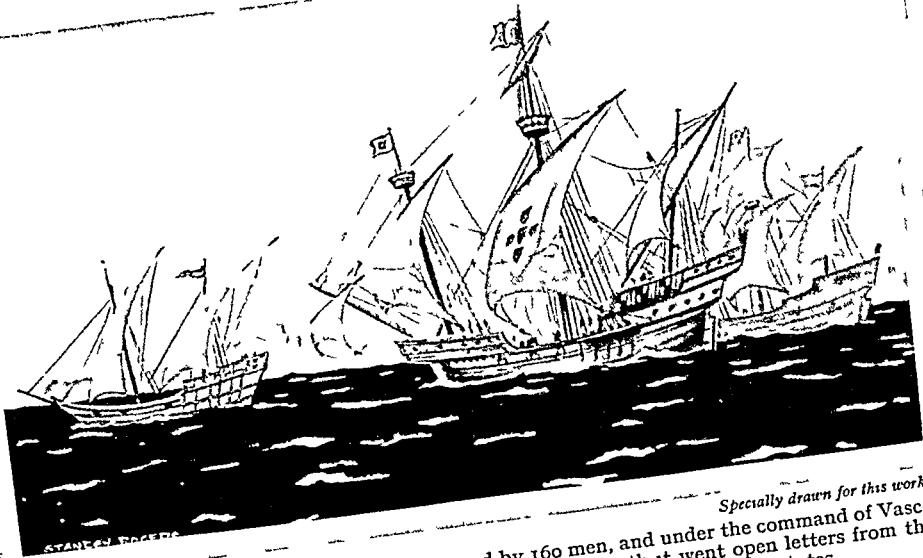
DIAZ AND VASCO DA GAMA

received him kindly, but would not let him leave his country, lest he should bring other of his countrymen back with him.

King John now knew for certain that India could be reached by way of the Cape. He had actually equipped a large fleet to sail to the East when his

from the King of Portugal addressed to rulers of African and Indian states.

Early in the voyage the ships were scattered by a storm, but they came together again safely at Cape Verde. On November 4th, 1497, they reached the island of St. Helena, where their attempts to get supplies of fresh pro-



Specially drawn for this work.
A small squadron of ships left the Tagus, manned by 160 men, and under the command of Vasco da Gama. The fleet carried provisions for three years, and with it went open letters from the King of Portugal addressed to the rulers of African and Indian states.

only son died. Hard on the heels of this disaster came the news that Columbus had reached what was thought to be the coasts of Asia. John then lost interest in his scheme, and it was left to his successor, King Manoel the Great, to gather the fruits of the great discovery.

Vasco da Gama.

Ten years after Diaz's return a second small squadron of ships left the Tagus, manned by 160 men, and under the command of Vasco da Gama. The leader had already made a name for himself both as a brave soldier and fearless sailor.

The fleet carried provisions for three years, and with it went open letters

visions were foiled by the hostility of the natives. By the end of November the Portuguese had put the Cape of Good Hope behind them, but not without a severe struggle against opposing winds and stormy weather, which provoked the crews to a serious mutiny. The ringleaders having been put in irons, the admiral himself and a few loyal men steered the ships until the dangerous headland had been passed.

Coasting round the end of Africa, and up the eastern shore, the fleet anchored on Christmas Day off a fertile country to which da Gama gave the name of Natal, in honour of the natal day, or birthday, of Christ. Here the Portuguese first came into contact with the great African negro race of Kaffirs, the

chiefs of which they won over by gifts of gaudy ornaments.

At various places along the coast da Gama landed to set up pillars, a supply of which every exploring captain carried with him. A pillar had engraved on it the name of the King of Portugal and the date of its erection, and so acted as a proof of the discovery and annexation to Portugal of the country in which it stood.

On reaching the mouth of a large river, probably the Zambezi, the fleet halted to clean and repair the ships. The Portuguese named this river "the River of Good Tidings," because while in it they heard of a great country further north. The sailors were now very eager to push on; but soon after leaving the Zambezi they were attacked by scurvy, due to lack of proper food,

and things were going very badly with them when they reached Mozambique. In this port they were astonished to see wretched-looking vessels, filled with precious metals, spices and jewels, brought from India. If such craft could cross the ocean, they argued, much more easily could they.

The Coast of Malabar.

Mozambique was a Mohammedan settlement. The Moors of the place, being hostile to the Portuguese both as "unbelievers" and rivals in trade, refused da Gama's request for fresh water. The admiral therefore turned his guns on to the town and bombarded it. He then weighed anchor and sailed northwards to Mombasa, where again the Moors behaved in an unfriendly way. At Malindi, north of Mombasa, a better



On Christmas Day da Gama's fleet anchored off a fertile country to which he gave the name of Natal, in honour of the natal day, or birthday, of Christ. Here the Portuguese first came into contact with the great African negro race of Kaffirs, the chiefs of which they won over by gifts of gaudy ornaments.

Specially drawn for this work.

DIAZ AND VASCO DA GAMA

reception awaited him. Courtesies were exchanged, da Gama presenting the ruler of the place with a splendid sword as a gift from King Manoel, and the Moor swearing friendship with Portugal—a promise to which he remained faithful in after days.

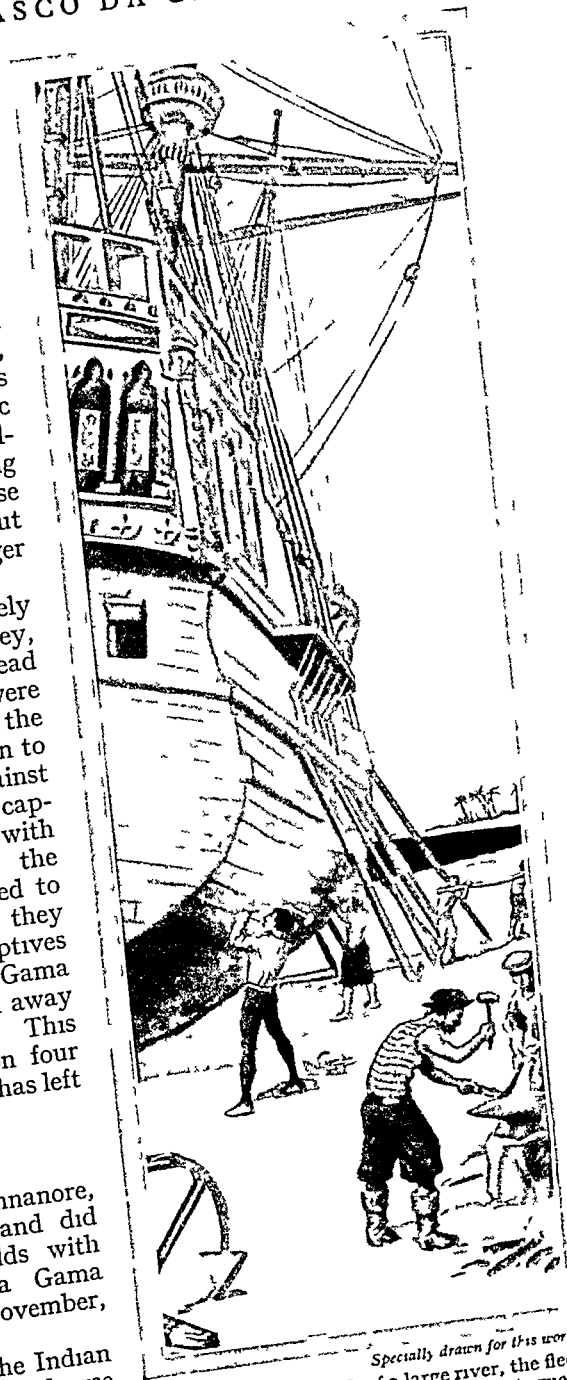
A pilot who knew the Indian Ocean well having been engaged, the fleet set out for India on April 24th, 1498, and about a month later it reached Calicut, on the Malabar coast. The ruler of this town—after which the cotton fabric called calico is named—was quite willing to trade with the newcomers, being no doubt impressed by da Gama's false statement that his few ships were but the advance-guard of a much larger fleet.

But the trade of the post was largely controlled by Moors of Cairo, and they, naturally jealous of interlopers, spread the report that the Portuguese were spies. This reached the ears of the ruler, who gave da Gama permission to trade while plotting treachery against him. Da Gama was lured ashore, captured, and carried away inland with some companions. Fortunately the Portuguese with the fleet managed to seize some Calicut nobles, whom they threatened to behead if the captives were not at once given up. So da Gama had to be released, and he sailed away vowing vengeance on the town. This threat he carried into execution four years later with a savagery that has left a stain on a great name.

Beset by Scurvy.

The fleet put in next at Cannanore, where it was well received and did a brisk trade, filling its holds with the products of India. Da Gama then set sail for home in November, 1498.

The return voyage across the Indian Ocean was greatly delayed by adverse winds. Scurvy broke out, thirty men died, and of the survivors not a dozen were in a fit condition to handle a ship. "All our folk," wrote a member of the



Specially drawn for this work
Reaching the mouth of a large river, the fleet halted to repair the ships. The Portuguese named this river "The River of Good Tidings," because whilst in it they heard of a great country further north.

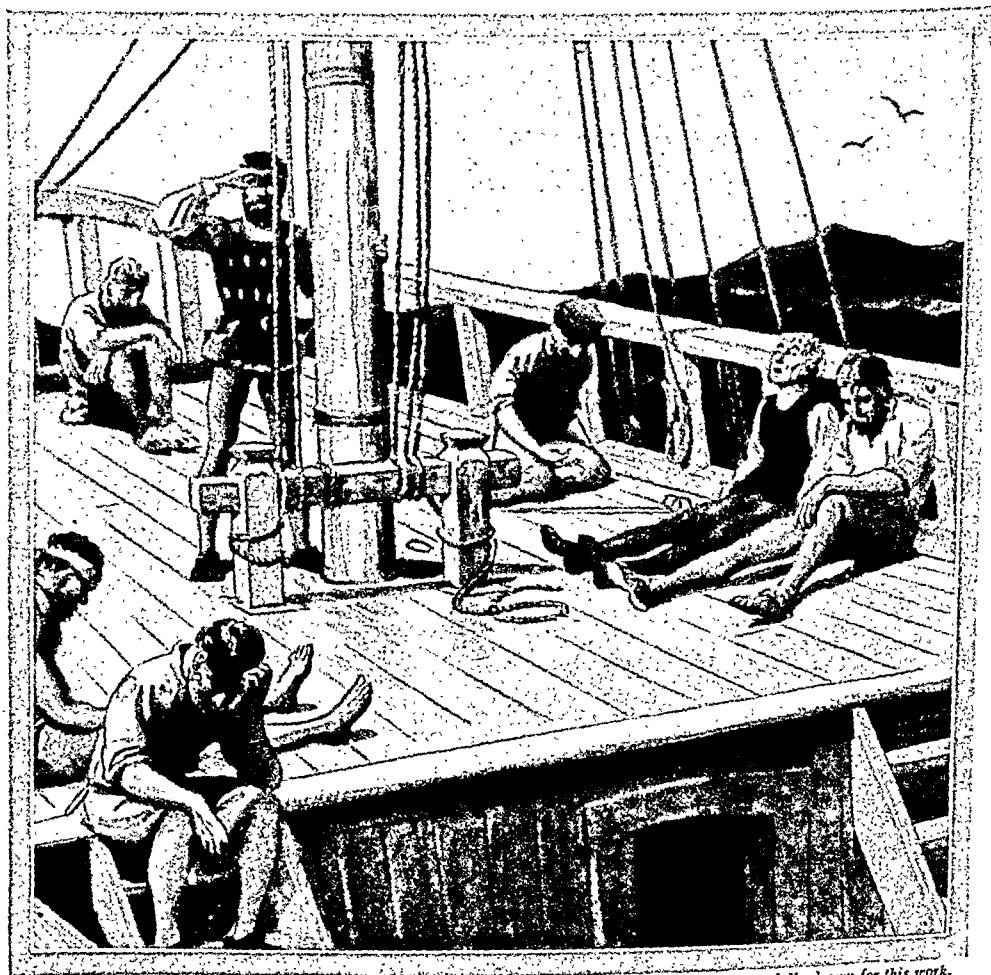
expedition, "suffered from swelling of the gums, which spread over their teeth till they could not eat. They swelled also in the legs and other parts until they died." Such was the terrible disease from which sailors suffered during long voyages in days when it was impossible to carry fresh meat and vegetables.

Things came to such a pass that the captains had already decided to turn back to India, when the wind suddenly changed and carried the fleet to the African coast, the sight of which glad-

dened the sick men's eyes as much as if it had been Portugal itself. The King of Malindi now proved his friendship by sending aboard a plentiful supply of fruit and other much-needed food, and even asking the King of Portugal in a letter to let his men come again to his country.

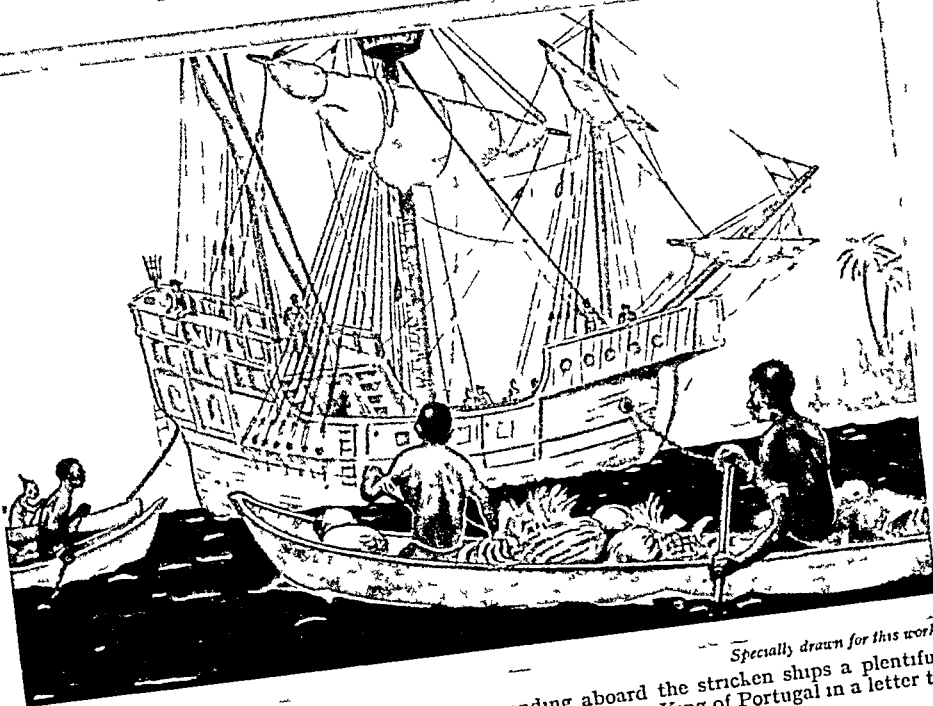
Admiral of the Indies.

The homeward voyage was slow and uneventful, except for the death of da Gama's brother Paul at the Azores. The loss affected the admiral so deeply



Specially drawn for this work.

Da Gama set sail for home, but his return journey across the Indian Ocean was greatly delayed by adverse winds. Scurvy broke out, thirty men died, and of the survivors not a dozen were in a fit condition to handle a ship.



Specially drawn for this work

The King of Malindi proved his friendship by sending aboard the stricken ships a plentiful supply of fruit and other much-needed food, and even asking the King of Portugal in a letter to let his men come again to his country.

that he lingered for weeks in the islands, while the one other ship which had survived sailed ahead. It had been in Lisbon seven weeks when da Gama's ship entered the port in September, 1499.

A Stream of Wealth.

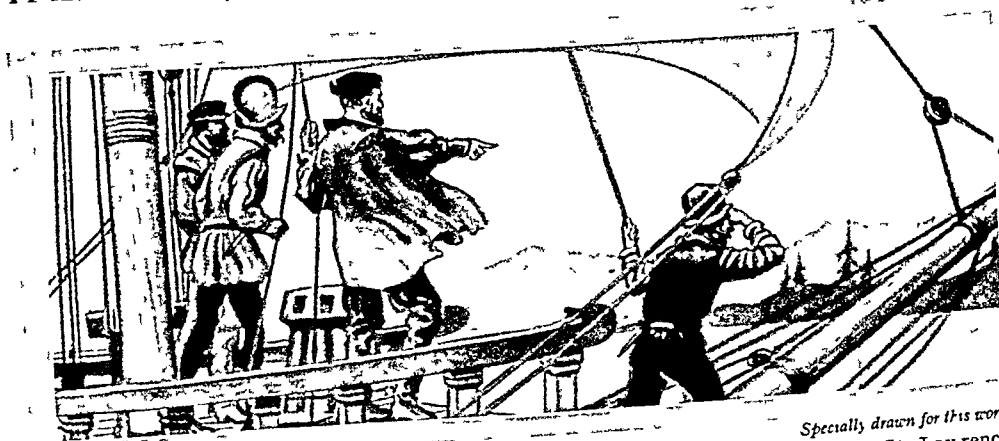
As reward for his great work da Gama was ennobled, granted a large pension, and made Admiral of the Indies. The King built, as a thank-offering, a great monastery named Bethlehem, on the spot where, in 1497, da Gama had embarked. This is still standing.

It is difficult for us in these days to realise what da Gama's voyage meant for Portugal. The Cape route effectively turned the flank of the Mohammedan traders in Egypt and Western Asia. For more than a century it gave Portugal a practical monopoly of trade between Europe and India and brought to the Portuguese a steady stream of wealth.

Strictly speaking, it is not too much to refer to Portugal in the years which immediately followed da Gama's voyages as being Mistress of the Seas. To her credit, Portuguese seamen had rounded the Cape of Good Hope and also threaded a course athwart the Indian Ocean. She certainly responded nobly to the opportunities and became a centre of unexampled riches; though her very prosperity brought jealousy in its train. Indeed, Portugal was at a later date and for a time to all intents and purposes under the heel of Spain.

To whatever nation they belonged, such men as Diaz and Vasco da Gama, the Cabots, Magellan, Barents and all the other great mariners who found fresh lands and charted new routes were wonderful pioneers, and we in our day must pay to their memory the honour that is justly their right.

THE STORY OF THE NORTH-WEST PASSAGE



Specially drawn for this work

Jacques Cartier, who had sailed from St. Malo, in France, explored the Gulf of St. Lawrence and took back to his own country two native boys.

THE successes of Columbus, Vasco da Gama, Vespucci and Magellan did not pass unnoticed in other countries. The prospects opened up by these explorers aroused among the French and English a desire to share in the good things of Asia.

The Cabots had sighted the New World in 1498, but their work had not been followed up when, in 1508, two French ships, captained by Jean Aubert and Giovanni da Verrazano, sailed westwards. They discovered the St. Lawrence River, explored it for 200 miles, collected a number of furs, and returned home. In 1524 Verrazano was sent westwards again to find a passage round the north of America, which was now recognised as being a continent. He made land near Cape Fear, in North Carolina, and followed the coast northwards to Rhode Island, noticing the abundance of wild vines which had attracted the attention of the Vikings more than 500 years earlier.

Guarding the Ships.

The next explorer sent on the same quest was Jacques Cartier, who sailed in 1534 from St. Malo, in France. On his first voyage he explored the Gulf of St. Lawrence and brought back two native boys. The next year he pushed

up the river to where Quebec now stands, hoping that it would prove to be a channel through the continent. Here he laid up two ships for the winter, and got the third, the smallest, ready for a voyage of further exploration. The Indians tried all means of dissuading Cartier against the attempt, as the two boys, brought back from France, had warned them of the power of the white man and of the danger he might be to their country.

However, Cartier knew his own mind. Leaving a few men behind to guard the ships, he sailed westwards as far as a rocky headland overlooking the river. He was so impressed by this that he named it the Mont Regal—Royal Hill—words which have since been shortened into Montreal. A little higher up rapids were met with, and these stopped the voyagers. If you look at a map you will see that these are called the Lachine Rapids, the title given them by Cartier, who thought that they could not be far from La Chine—China.

Soon after his return to Quebec winter came on and the ships were quickly frozen fast in the ice. Scurvy broke out and struck down 200 men, twenty-five of whom died. The ten who escaped the disease could not have repelled the Indians had these made an

THE STORY OF THE NORTH-WEST PASSAGE 685

attack. To prevent the condition of his force becoming known Cartier would allow no one to come near the ships, and though this was a prudent measure it cut off all supplies of fresh food.

In the New World.

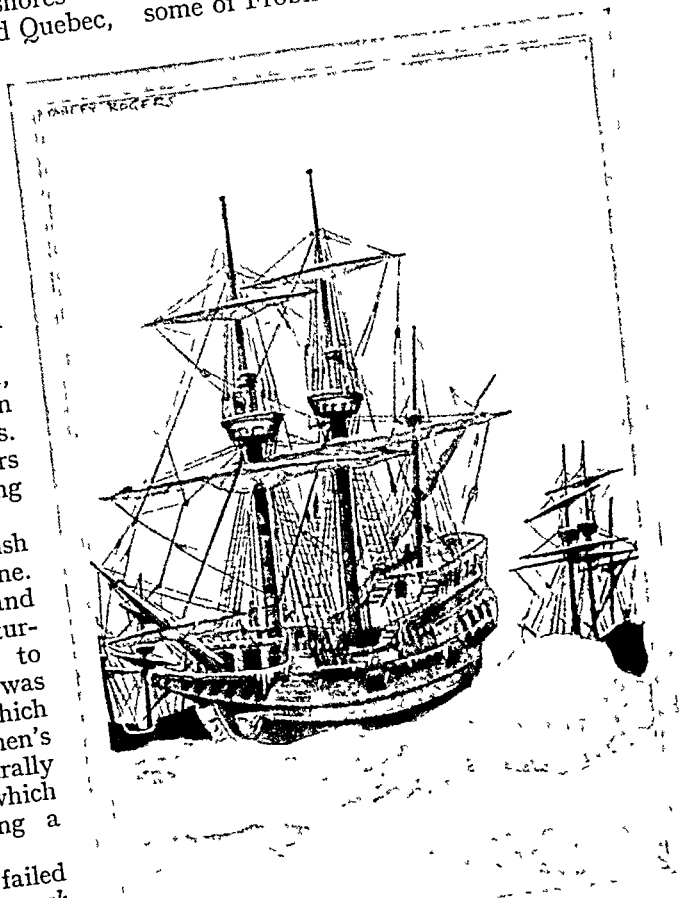
As soon as the ice broke up Cartier sailed for home. Six years later he made a third and last voyage to prepare the way for a large expedition sent out to colonise the shores of the St. Lawrence. He reached Quebec, built a fort, mounted guns in it, and sent two ships home. He then visited the Lachine Rapids again and tried to pass them; but, failing to do this, he returned to the fort. After waiting in vain for the expedition he sailed for France and passed it on the way.

A colony was founded, but it appears to have been wiped out by the Indians. For the next sixty years the French did nothing more in the New World.

Meanwhile the English appeared on the scene. Under the Tudors England had become a manufacturing nation with goods to sell. The difficulty was to find markets in which to sell them, and men's thoughts turned naturally to the East, from which Portugal was reaping a rich harvest.

Since Cartier had failed to find a way through America, some Englishmen determined to explore for a passage to the north of it. Two small ships, the *Gabriel* and *Michael*, under the command of Sir Martin Frobisher, one of England's

bravest sailors, sailed from Deptford on June 7th, 1576. These voyaged northwards past the southern end of Greenland, and encountered so severe a storm that the captain of the *Michael* put his helm about and returned to England. Frobisher, on the *Gabriel*, held on, and reached Baffin Land, a bay in the southern part of which still bears his name. Here for the first time on record white men fell in with Eskimo, who proved themselves sad thieves and probably murdered some of Frobisher's men.



Specially drawn for this work.

Cartier had not long returned to Quebec, when winter came on and his ships were soon frozen fast in the ice. Scurvy broke out and struck down two hundred men, twenty-five of whom died. Then Cartier would allow no one to come near the ships.



Specially drawn for this work
Frobisher reached Baffin Land, a bay in the southern part of which still bears his name. Here for the first time on record white men fell in with Eskimo, who proved themselves sad thieves and probably murdered some of Frobisher's men.

In a "Blind Alley."

Frobisher sailed back to England with ore supposed to contain gold, and the report that he had found a way to Cathay. For, although he had sailed nearly 200 miles along Frobisher Bay, he had not gone far enough to find out that it was a "blind alley."

The "gold ore," though probably nothing else than good iron ore, was said by experts to contain gold and silver. There is no word like "gold" to excite men's interest. Next year (1577) Frobisher sailed again, back to

the Bay, with three ships. The largest of these was loaded with 200 tons of the ore.

The Eskimo now showed themselves very hostile, shooting their arrows at the sailors whenever they got the chance, and as soon as signs of coming winter appeared the ships sailed back to England.

A third expedition set forth under Frobisher in 1579, but it had to return after shipping more ore and struggling with ice and losing some of the ships.

The next explorer of the inhospitable channels north of America was John Davis, a friend of Sir Walter Raleigh; who, with other men, fitted out two very small ships, one of 50 tons and the other of 35 tons. In these Davis started from England in 1585, and spent some months in exploring Cumberland Bay, Baffin Land. During the two following years he made other voyages, sailing along the western side of Greenland and the northern coast of Labrador, making maps as he went. To his credit

must be placed the discovery of the channel, afterwards named Hudson Strait, between Labrador and Baffin Land. So strong were the currents here that Davis called it "The Furious Overfall."

HENRY HUDSON, THE BOLD NAVIGATOR

IN the year 1607 some London merchants wanted to find a short cut to China and the East, so that they might expand their trade. They thought that there might be a way to China by

THE STORY OF THE NORTH-WEST PASSAGE 687

the North-West passage, so they sent for Henry Hudson, a well-known navigator, and asked him to sail towards the North Pole and find out a new way to the East for them.

Towards the North Pole.

He agreed to do so, and one day he set off in a small ship with ten men for his crew, and a small boy. In those days life in a ship was very different from what it is now. There were no charts for the longer sea-voyages, and the captain had to steer the best course he could. There was little food, and that little was often bad. The meat had to be salted, vegetables were lacking, and the hard ship-biscuits were grub-eaten.

The lack of vegetables gave the sailors a disease called scurvy, and hundreds died from this. There was no comfort on board; for, compared to our modern vessels, the ships were very small and often unclean.

In spite of these hard and perilous conditions even small boys went to sea, and lived to grow into strong "sea-dogs."

Up the east coast of Greenland he sailed, and then reached the great ice-barrier that stretched to Spitzbergen. He went there and finally returned to England, saying that the way to

China by the North-West passage was impossible.

"But," he said to the merchants, "you will find much good trade if you send to Spitzbergen. There are fine fisheries there."

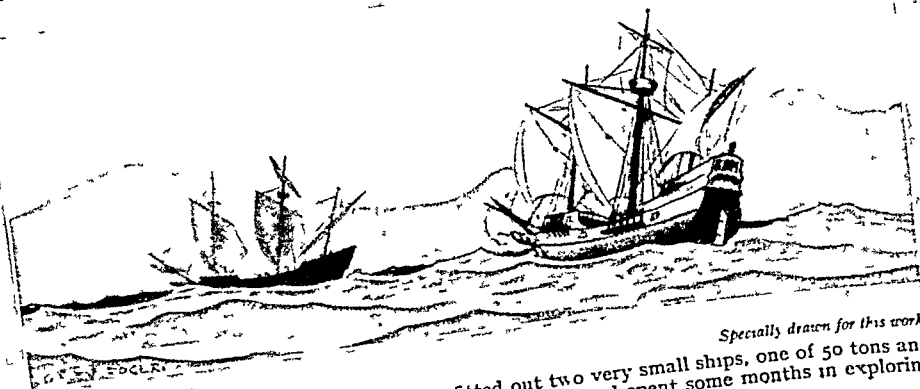
The merchants took his advice, and sent vessels to Spitzbergen to trade. They were very successful, so that, although Hudson had to return with his object unaccomplished, his voyage had not been a failure.

He tried to find a short way to the East again the next year, but could not. Then in 1609 the merchants of the Dutch East India Company resolved to find a way, either North-East or North-West, for they were certain that a short route was possible.

Up the Hudson River.

Hudson by this time had a great reputation as a skilful navigator. The merchants asked him to try once more to find the passage. He consented, and they gave him a vessel called the *Half Moon*. He had a crew of twenty, and with these he boldly set out once again.

He sailed for the cold northern waters, but when he neared Nova Zembla the conditions were so terrible, and the cold so bitter, that the crew refused to go on. So Hudson had to make for the



John Davis, a friend of Sir Walter Raleigh, fitted out two very small ships, one of 50 tons and the other of 35 tons. In these he started from England and spent some months in exploring Cumberland Bay, Baffin Land.

Specially drawn for this work

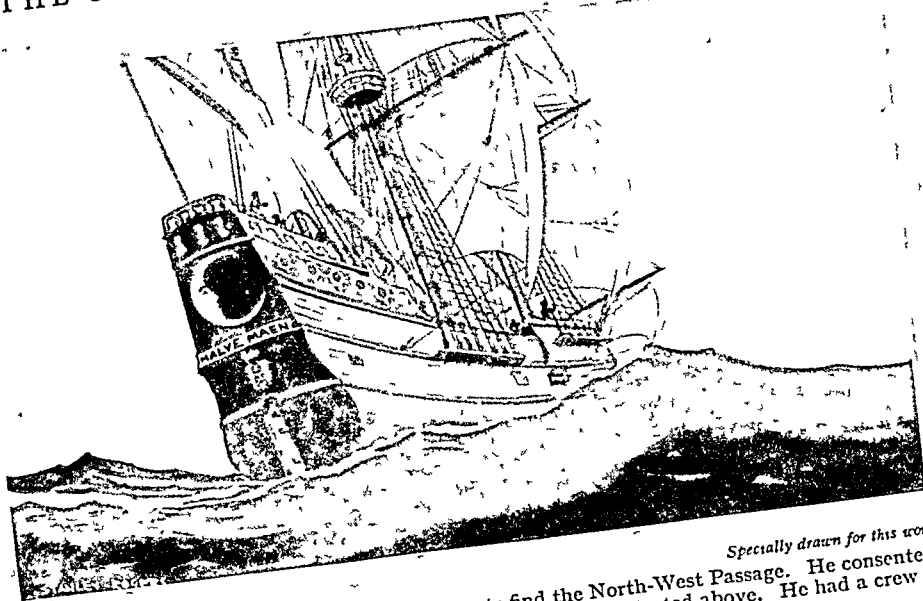
AMIDST THE ICEBERGS

STANLEY ROGERS



Henry Hudson set off in a small ship with ten men for his crew and a small boy. Up the east coast of Greenland he sailed and then reached the great ice-barrier that stretched to Spitzbergen. "You will find much good trade if you send to Spitzbergen," he said, on his return. "There are fine fisheries there."

Specially drawn for this work



Specially drawn for this work.

The merchants asked Henry Hudson once more to find the North-West Passage. He consented, and they gave him a vessel called the *Half Moon*, which is illustrated above. He had a crew of twenty, and with these he boldly set out again.

east coast of North America. He thought that perhaps there might be a water-way by which he could sail through the continent, and reach the Pacific Ocean on the other side. He had heard sailors talk of an isthmus of this kind, so when he entered the Bay of New York, and sailed up the Hudson River, he thought perhaps he was on the way to finding it.

But he found that he was wrong. He thoroughly explored the river, and the country round about, and then, satisfied that he could not reach China that way he returned to England.

Caught in the Ice.

The next year he started out again. Past the Orkneys and the Faröes he went, to Iceland. Then he set his course for Greenland, and soon the ship was sailing in the midst of icebergs. Then to the Hudson Strait he went, and into Hudson Bay. For some months he explored this part of the world. It was not a pleasant place.

The nights were long and dark, and the weather was freezing cold.

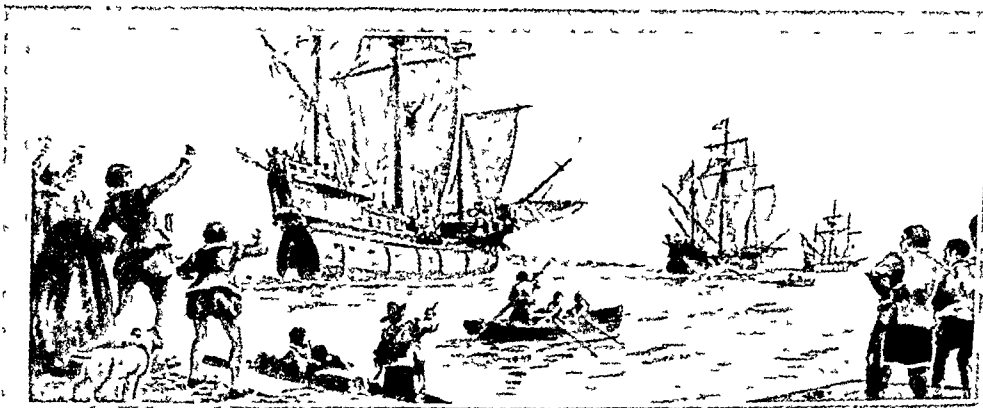
Icebergs floated about the ship and the sailors were in constant fear of their vessel being crushed. Then, as the winter became more advanced, the sea froze, and the ship was caught in the ice. Hudson went on shore with his men, and tried to make up for the shortness of the food by trapping game. But even with this extra food, there was not enough, and the men passed a miserable time, hungry and cold all the winter through.

At last the cold months came to an end, and the ice broke up. Hudson made preparations for leaving. He carefully shared what food there was left, between himself and the crew, and then waited for the conditions to get better.

But his sailors, half-starving, and fearful of further misfortunes, mutinied against him. They ate all their food in two days, when it should have lasted a fortnight. Then they turned on Hudson, and blamed him for their mis-

x x

THE FATE OF SIR HUGH WILLOUGHBY



Specially drawn for this work

The three ships were named *Good Hope*, *The Lucky Edward* and *Sure Trust*. They were placed under the command of Sir Hugh Willoughby, and set out from Ratcliffe, a little port some distance below London. Its name now survives in the Ratcliffe Highway.

IN the reign of Edward VI. "certain grave citizens of London, men of great wisdom, and carefull for the good of the Countrey," decided that "three ships should be prepared and furnished out, for the search and discoverie of the Northerne part of the world, to open a way and passage to our men for travaile to new and unknown Kingdoms."

The "grave citizens" in question were the Merchant Adventurers, who had been granted a charter by Henry VII. ; and the passage they wished to find was one round the north coasts of Europe and Asia. Nothing whatever was known of the geography of those parts. Had it been realised that voyaging along them meant what we should now call Arctic exploration, the expeditions which are to be described in this chapter might most certainly never have been sent.

The Merchant Adventurers.

To the Merchant Adventurers, however, ignorance gave confidence. The three ships were assigned the well-omened names of *Bona Esperanza* (Good Hope), *Edward Bonaventure* (The Lucky Edward), and *Bona Confidentia* (Sure Trust); and, what was perhaps of more practical importance, were pro-

vided with a copper sheathing below the water-line, to protect them against the shipworm, or teredo, from which the ships of many earlier explorers had suffered grievously.

The ships were placed under the command of Sir Hugh Willoughby, on the *Bona Esperanza*. Another fine sailor, Richard Chancellor, was captain of the *Edward Bonaventure*.

Off from the Thames.

On May 20th, 1553, the ships set out from Ratcliffe, a little port some distance below London. Its name now survives in the Ratcliffe Highway. "At Greenwich, where the Court lay, the sailors, attired in sky-blue clothes, manned the yards and fired several broadsides, to the great admiration of the courtiers and the crowd of other onlookers."

After being delayed by contrary winds at Harwich, the fleet steered for the coast of Norway, not without many misgivings on the part of the crews. These were soon justified by a great storm, which parted Chancellor's ship from the other two. The Captain made for Vardö, on the north-eastern coast of Norway, which had been fixed as the rendezvous should the fleet be scat-

tered. But after being there for a week, and fearing that the others had gone ahead, Chancellor sailed eastwards until "it pleased God to bring them into a certain Great Bay, which was one hundred miles or thereabout over."

First in Moscow.

The Great Bay was the White Sea. Here Chancellor got into touch with some Lapp fishermen, who told him that he had reached the shores of Russia. From this outlandish place Chancellor sent a message to the Czar, asking permission to trade in his country.

A reply came back inviting him to the Court at Moscow. The 500-mile journey was made on a sledge, and Chancellor presently reached the Russian capital, being the first Englishman to see it. Having handed over a letter addressed by Edward VI. to the Czar, Chancellor returned to his ship and sailed for England, bearing the Czar's reply to the King, who had just died and been succeeded by Mary.

On a Barren Shore.

Of the fate which overtook Willoughby and the other two ships after the storm we learn something from documents found in 1554 along with the frozen bodies of all the missing men. According to Willoughby's log, the ships were carried north of Vardo to some

land which may have been Spitzbergen or Nova Zembla. They entered a harbour, where the sailors saw many bears, deer, foxes and some other creatures strange to them. Thence they sailed south to a land in which it was decided to pass the winter. Men were sent out east, west and south to search for signs of habitation, but without success.

That is all we know definitely; but we may picture the gradual failure of provisions, followed by a grim tragedy such as overtook Captain Scott and his gallant companions centuries later in the Antarctic.

Trade with Russia.

The expedition had, however, not been entirely in vain, since it opened up a profitable trade with Russia which lasted for many years. But the Merchant Adventurers, satisfied with the opening for their goods, seem to have abandoned further exploration after sending out two more well-equipped expeditions, one of which reached the Kara Sea.

The Merchant Adventurers were established chiefly to foster our commerce with other countries, especially the sale of English cloth. They had important trading centres abroad and formed a powerful association.



Specially drawn for this work

The Great Bay which Chancellor reached was the White Sea Here he got into touch with some Lapp fishermen, who told him he had arrived at the shores of Russia.

AN ADVENTUROUS DUTCHMAN



Specially drawn for this work.

One of the incidents of the voyage of Barents in the *Mercury* was a fight with a huge polar bear, which killed two men before it was itself slain with a spear.

WE now first make acquaintance with Dutch explorers in the person of William Barents. Like the English, the Dutch wished to reach the riches of Cathay, especially as their long wars with Spain had reduced their country to great poverty.

In 1593 a group of Amsterdam merchants sent Barents in the *Mercury* to find a way round Nova Zembla. As he was blocked by ice at his first attempt, a second expedition, of seven ships, was dispatched the next year. This, too, was foiled by the ice, and the only occurrence of the voyage worth noting was a fight with a huge polar bear, which killed two men before it was itself slain with a spear.

North and South.

Still not discouraged, the merchants sent out two more ships in 1596, under Barents as chief pilot. It was decided to steer far to the north of Nova Zembla in hopes of avoiding the ice, and the course brought the vessels to the Spitzbergen group of islands. Sailing round these, the ships headed southwards to Bear Island, where a dispute took place between Barents and the captain of the other ship, who sailed away northwards while Barents held on towards the south.

On the shores of Nova Zembla

Barents' vessel was trapped in the ice and lifted by it in a manner "which was most fearful both to see and hear, and made all the haire of our heads to rise upright."

Winter in the Arctic.

Then followed a winter spent in the Arctic, of which, thanks to a diary kept by one of the crew, a complete account has come down to us. It has a special interest as being the first account of the kind; for the papers left by Willoughby were but fragmentary and disjointed.

Seeing that the ship would probably be crushed, the crew left her and set about building a hut on land with a number of trees that had been washed ashore. Had the trees not been available they would probably have perished. The erection of a shelter was no easy work. Ravenous bears attacked the workers, and the cold made nails stick to the flesh. The beer was frozen solid in its casks; blizzards pierced the thickest clothes and made breathing difficult.

Completed at last.

But at last the hut was completed, piled over with seaweed and fitted with bunks inside. To mitigate the terrible cold a wood fire was kept burning; yet

GOOD SERVANT BUT BAD MASTER!



Specially drawn for this work
The adventurers built a hut piled over with seaweed and fitted with bunks inside. To obtain more heat they burned some of their small stock of coal and stopped up the chimney. For a time they enjoyed the heat. Then they began to feel dizzy with the fumes from the coal.

the bunks were covered with an inch of ice, and feet placed so close to the fire that stockings were burnt felt no heat. In fact, it was only the sense of smell that made the wearer aware of his foot-covering being in danger.

Prisoners of the Ice.

To add to their troubles the chimney smoked so badly in rough weather as almost to stifle them, though this was better than being completely frozen. On one occasion, to obtain more heat, they burned some of their small stock of coal and stopped up the chimney. For a time they enjoyed the heat. Then they began to feel dizzy with the fumes from the coal and rushed to open the door, "when we all recovered our healths again by reason of the cold air, otherwise doubtless we had died in a swoon." They certainly would have died, but from carbonic acid gas poisoning, and not, as they thought, from the heat.

Twelfth Night was celebrated with oil-and-flour pancakes and a drop of wine; and great was the rejoicing when, on January 24th, the long-absent sun appeared wanly above the horizon.

But for five more months they were held prisoners by the ice, gradually losing strength as provisions grew more and more scanty. The ship had been ruined by the ice, and their only

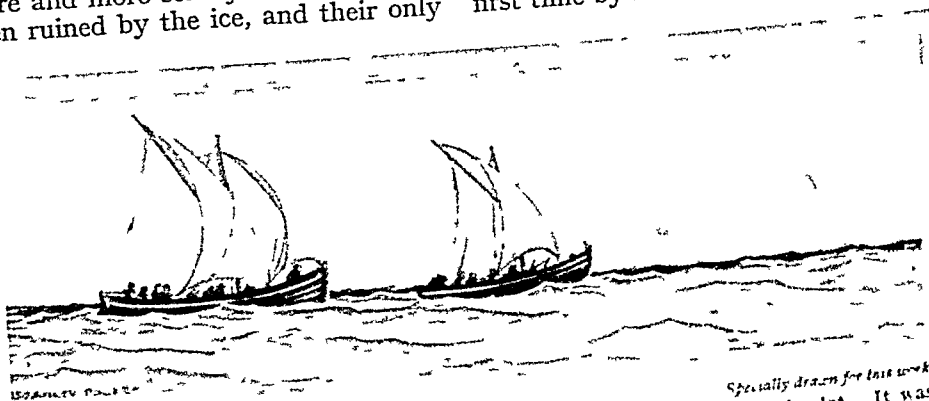
hope lay in the two ship's boats that remained serviceable. On June 12th, 1597, the eighteen men surviving dragged the boats into the water and sailed away, after Barents had hung up in the hut an account of their experiences.

A Voice from the Past.

Soon after the start Barents died of privation. This was a great loss, as he was the navigator of the party. For more than a month the men fought their way through ice floes and stormy waters, living as best they might on eggs and foxes. At last, after a journey of 1,600 miles, they fell in with a Russian ship, and the eleven who had survived were saved.

Two hundred and seventy-four years later (1871) the ruins of the hut were discovered, and under them a number of tools, arms, knives, books and other interesting relics. In 1875 an Englishman examined the ruins again, and found a powder-horn containing the account left by Barents. This was still in a readable condition, though nearly three centuries had passed since it was written.

It had, in a manner of speaking, been posted in Elizabeth's reign and delivered in that of Victoria—three years, it is interesting to note, before the North-east Passage was made for the first time by Baron Nordenskiöld.



The Dutch merchants sent out two ships, in 1596 under Barents as chief pilot. It was decided to steer far to the north of Nova Zembla in hopes of avoiding the ice.



[From the painting by the Hon. John Collier.

THE LAST VOYAGE OF HENRY HUDSON

In 1610 Henry Hudson set forth on an attempt to find the North-West Passage round the North coast of the American continent. While exploring the bay now known as Hudson Bay his ship was caught in the ice. By June 1611 victuals were running low and the crew becoming discontented, a mutiny broke out on board. The crew cast Hudson adrift in an open boat, accompanied by his fourteen-years-old son and seven members of the crew, most of whom were sick. Nothing was ever heard of them again.

True Tales of High Adventure



In the Days
of
Cook and Livingstone



Rischgitz.

AN INCIDENT IN CAPTAIN COOK'S VOYAGES

The above picture, reproduced from a water colour sketch by John Webber in the South Kensington Museum, depicts the scene when Captain Cook, on one of his many voyages, landed on an island in the tropics. Often the natives met him eagerly, trading with him for hatchets, knives and hoop-iron. Once the daring sea adventurer was taken to be a god whose return to earth had been prophesied

THE COLUMBUS OF THE PACIFIC

EARLY one morning in 1742 a lad of fourteen years stood on the edge of the high ground overlooking the busy little port of Whitby, in Yorkshire. Below him stretched the huddled roofs of the town, from which wisps of smoke were beginning to curl, and the harbour, filled with fishing smacks unloading their catches. By the quay lay a ship taking a cargo aboard.

The boy's mind had already been made up. He hastened aboard the ship and approached the mate, cap in hand, with a request to be engaged as cabin boy. We can picture the mate looking him up and down. Another of these silly lads who *will* run away to sea and all the perils and hardships of a sailor's life! What the mate thought of the boy at their first meeting we shall never know, but we may be sure that he never suspected that here before him

stood one who would become world-famous as Britain's greatest navigator and explorer—James Cook.

The Call of the Sea.

James was the son of a Yorkshire farm labourer. Through the generosity of a gentleman who took an interest in him, he received a free education at the village school, and at the age of thirteen he was apprenticed to a shopkeeper at Staithes, a fishing village a few miles from Whitby. In the intervals of hard drudgery in the shop James no doubt foregathered with the local seamen, and through talk with them first heard that call of the sea which soon became irresistible. And so that morning he left the selling of soap and sugar and drapery behind him and "went for a sailor."

We know very little of what hap-

pened to Cook during the next thirteen years except that he became apprenticed to the owners of the ship and rose to the position of mate. In 1755 war broke out between England and France, and rather than be pressed for the Navy Cook joined it as a volunteer. Then follows a blank of four years, at the end of which our hero was raised to the rank of master of H.M.S. *Mercury*, and sailed for the St. Lawrence to assist in the siege of Quebec by General Wolfe. To Cook was assigned the difficult task of taking soundings in the river near the city; and, later, that of surveying the dangerous parts of the channel lower down. He did the work so well as to win the high approval of his superiors.

After Twenty-five Years.

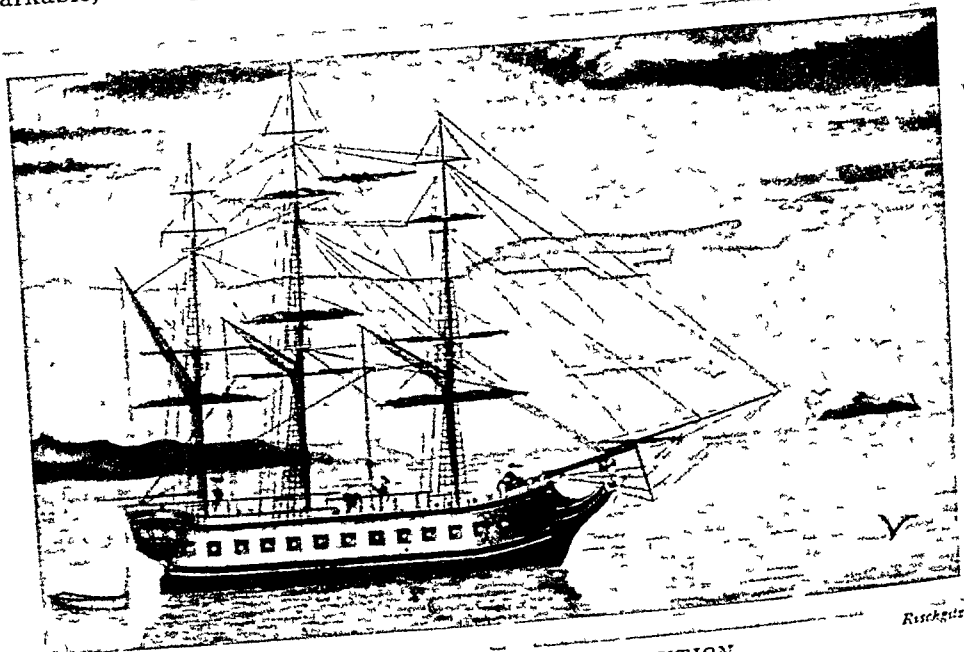
For a labourer's son to become, at the age of thirty, the commander of a King's ship was in those days a remarkable, and probably unequalled,

feat. No person of ordinary abilities could have done it. This tall, spare son of a Scot-descended father and Yorkshire mother had overcome all obstacles by sheer hard work and love of his profession. Though a man of few friends, Cook commanded the respect, obedience and confidence of his crew, who, to use a common phrase, would follow him anywhere.

After the fall of Quebec Cook spent four years in surveying Newfoundland and neighbouring islands, and then returned to England, in the autumn of 1767, with twenty-five years of sea service to his credit.

The Admiralty's Choice.

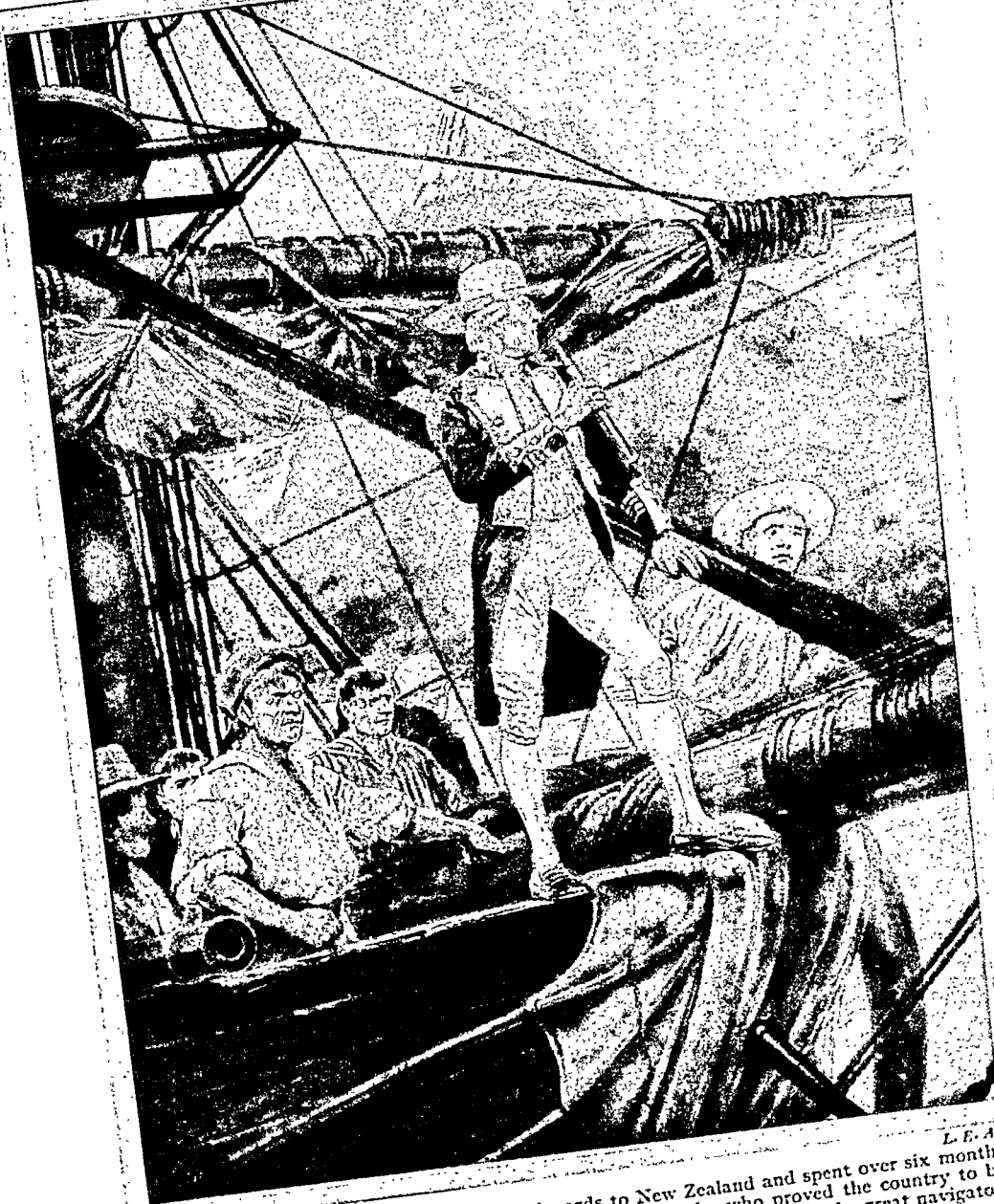
It happened that a transit of the planet Venus across the sun was due in 1769, and the Royal Society had found out that it could best be observed from some place in the Pacific Ocean. The members petitioned King George III.



CAPTAIN COOK'S SHIP *RESOLUTION*

Captain Cook set off on an expedition to search the southern hemisphere of the world for a continent which people believed to be there. He was in command of two small ships, the *Resolution* and the *Adventure*. The former, illustrated above, was of 462 tons, and carried a crew of 112 men, twelve guns and a large number of animals for landing on the islands.

MAPPING NEW ZEALAND'S SEABOARD



L. E. A.
 In the year 1769 Captain Cook sailed southwards to New Zealand and spent over six months in surveying the coast, making maps, and so on. It was he who proved the country to be formed of two islands, separated by a strait which still bears the name of the great navigator. From New Zealand he went on to Botany Bay, now a suburb of Sydney. Imagining the coast thereabouts to be like that of the north of the Bristol Channel, he called it New South Wales. The above painting is by R. Caton Woodville.

to send out an expedition to make observations. The King promised to equip a ship for the purpose. But where was the man fit to command it? The Admiralty were able to lay their fingers on the right person—James Cook, master in the Royal Navy, who had a deep knowledge of navigation and the scientific mind needed for such a task. He was accordingly appointed captain of the *Endeavour*, a Whitby-built ship of 370 tons, which carried, besides a crew of eighty-five men, a party of scientists and their helpers.

Great Treasure Expected.

Since Magellan's time thirteen voyages had been made round the world, yet very little was known of the Pacific Ocean, because most explorers had followed much the same track as Magellan. A map of the world published about this time shows New Guinea joined on to New Holland (Australia), of which only the west coast appears; Lower California is an island; the north-western coast of North America is not marked at all; and a vague corner of land stands for New Zealand. It was believed that a large continent lay to the south of the Pacific Ocean—not Australia, but something much more extensive—and that in it great treasures would be found, such as Portugal had reaped from Asia and Spain from the New World.

The *Endeavour* sailed from Plymouth on August 26th, 1768, and, following Magellan's route, reached Tahiti in mid-April. A stay of three months was made there, and the transit duly observed. Cook then sailed southwards to New Zealand and spent over six months in surveying the coast, proving the country to be two islands separated by a strait which still bears his name.

From New Zealand he went on to Botany Bay, now a suburb of Sydney, New South Wales. From this point he followed the eastern coast of Australia northwards for over 2,000 miles, and

put it and the Great Barrier Reef on the map. During this voyage white men first saw kangaroos, which the sailors thought to be evil spirits until they had caught one. Further exploration showed that New Guinea was not a part of Australia.

A Terrible Disaster.

The voyage seems to have been prosperous till the ship left Batavia, in Java, when fever and scurvy attacked the company. Of forty who fell ill twenty-three died, including the astronomer, the surgeon, the first lieutenant, two midshipmen, the carpenter, the sailmaker, the cook, and the corporal of marines. The disaster, great as it was, had one good result. It made Cook give his attention to preventing outbreaks of scurvy. If he were not famous as a navigator, Cook would deserve fame merely for his discovery of a way of delivering sailors from that horrible disease, formerly the curse of voyaging far from land.

On his return to England in 1771 Cook was promoted from master to commander—not a great reward for his services. A little more than a year later he was off again, in command of an expedition of two small ships, the *Resolution* and *Adventure*, to search the southern hemisphere of the world for the expected continent. As a precaution against scurvy, large quantities of wheat, sugar, malt, salted cabbage, lemon juice, carrot marmalade and mustard were included in the stores, besides a stock of trading goods. In spite of their sufferings on the first voyage many members of his old crew served again.

Southward Ho!

The little *Resolution*, of 462 tons, must have been very crowded. For, in addition to a crew of 112 men, she carried twelve guns and a large number of domestic animals for landing on the islands.

From the Cape the ships headed

WINNING FAVOUR WITH THE NATIVES



Reproduced from "The Book of Discovery" by permission of Messrs. George G. Harrap & Co., Ltd.

It was Captain Cook who laid the foundations for the taking of Australia and New Zealand into the British Empire. He also discovered a great many island groups in the Pacific Ocean, and these would trade with the native chieftains. On some of his voyages Captain Cook carried sheep by means of which he won favour with the aborigines. In this illustration, from a painting by Stephen Reid, we see him presenting some sheep and a goat.

southwards till, in January, 1773, they reached ice, which they skirted for a distance of 3,500 leagues, passing many icebergs. New Zealand was reached on March 26th, the first land to be sighted for 122 days. After surveying the coasts of the islands for a couple of months, Cook made for Tahiti and cruised about, discovering Hervey's Islands.

By November the ships were back in New Zealand, from which they sailed south-eastwards to continue the exploration of what we now call the Antarctic Ocean. Once again they reached a great wall of ice and coasted along it until they could go no further and had to turn northwards. After touching at Easter Island, the natives of which had their ears weighted down nearly to their shoulders, they spent the Antarctic winter season in the middle Pacific.

A great many new islands, including the Sandwich Islands, New Caledonia, and Norfolk Island, were discovered during this season. Cook then returned to New Zealand and made a third attempt to find a great southern continent, and though he was unsuccessful he discovered the island of South Georgia, named after the King. Useless as the island seemed then, it has since become the great centre of the whaling industry.

By the time that he turned north again for England Cook had sailed right round the world inside or near the Antarctic circle—the first circumnavigation of the globe from west to east.

In the Arctic Regions.

This second voyage made it plain to Cook that the expected continent either did not exist, or, if it existed, was so icebound as to be useless. The second supposition has since proved correct. The Continent of Antarctica is a fact. It is probably half as large again as Australia, and is covered by an ice cap.

When he reached England again Cook was in the forty-eighth year of his age. "No man under fifty," writes the

late Sir Walter Besant, "had worked harder; no man living had achieved so much; other men had been shipwrecked and cast away; plenty of men had encountered perils of every kind; none so many perils or so various as Captain Cook. . . . He had done enough."

But Captain Cook—observe that he had been given the rank of full captain in the Navy for his discoveries of the second voyage—could not rest. While he was dining one evening with Lord Sandwich, First Lord of the Admiralty, mention was made of an expedition about to start to find the North-west Passage from the western side of America. Cook sprang up and offered to take command, and the offer was accepted.

When Cook was Worshipped.

So on February 6th, 1776, we see him leaving Plymouth on his third and last voyage. Sailing round the Cape he reached New Zealand nearly a year later. The next twelve months were spent in the many groups of Pacific Islands covered by the name Oceania, and then the ships turned north along the shores of California, Oregon, British Columbia and Alaska—to give them their present names—passed Cape Prince of Wales, the most westerly point of North America, and sailed about in the open sea north of the Bering Strait.

Cook soon satisfied himself that the North-west Passage was not practicable. The natives met with here and there exchanged furs readily for any metal articles, such as hatchets, knives and hoop-iron. The sailors felt disappointed with so poor a trade, as they thought it, and were pleasantly surprised by the high prices that the furs fetched in Chinese ports.

After months of his usual careful observations, Cook sailed for the Sandwich Islands, and discovered two new islands of the group—Maui and Hawaii. At the time of his arrival the King of

IN THE BAY OF ADVENTURE



L. E. A.
Captain Cook, in his good ship *Resolution*, reached Tasmania in 1777, and at once annexed it for England. It was then called Van Diemen's Land, after a governor of the Dutch East Indies, though actually discovered by the man whose name it now bears, A. J. Tasman, in 1642. Captain Cook landed in Adventure Bay and the natives stared in positive amazement, shielded their eyes and dropped to the ground at the first sight of a white man.

Hawaii had just conquered the island of Maui. Cook was taken to be a god, whose return to earth had been prophesied. He was led in state to a sacred place, clothed in ceremonial garments, and worshipped as a superhuman being. When Cook left the Hawaiians his ships had not gone far

before one of them sprung a mast, and a return was made to Hawaii for repairs. The islanders, who by now had altered their views about the divinity of the Englishman, stole a boat. Some fighting took place to recover it, and on February 14th, 1779, Captain Cook was killed during a skirmish.



Reproduced from "The Book of Discovery" by permission of Messrs George G Harrab & Co., Ltd
Not long after Captain Cook had left the Hawanans one of his ships had a mast break adrift, and he put back for repairs. The islanders stole one of the boats of the British party, and some fighting took place to recover it. It was during this sharp skirmish that Captain Cook was killed.

THE STORY OF DAVID LIVINGSTONE



Central News.

AT THE SCOTTISH NATIONAL MEMORIAL

The above photograph shows us the piece of sculpture by Mr. Pilkington Jackson in the Livingstone Gallery of the Memorial. The title of this most artistic panel is "Faith," and it brings to our minds the conflict between faith and superstition, besides illustrating a well-remembered incident in the life of David Livingstone. This sculpture was the gift of the Congregational Churches of Scotland.

RATHER more than fifty years ago the name of David Livingstone was on everybody's lips. There had recently been laid to rest in Westminster Abbey the remains of one who had done more than any other man to make known to the world what lay in the interior of Africa, from the Equator to the Cape.

The place in which Livingstone lies is sufficient proof of the honour in which the nation held him. People still revere his name as that of a great missionary, a great defender of the African native against the horrors of the slave trade, and one of the greatest explorers of all time. On many a good map of Africa you will find marked, just south of Lake Bangweolo, the words "Livingstone died, May 1st, 1873." Only a very few men have received such a tribute from the makers of atlases.

After his Day's Work.

While there is little danger of Livingstone being forgotten, the number of those who remember what he did tends to become smaller as the date of his death becomes more distant. Let

us then devote the next few pages to reviewing some features of a great life.

David Livingstone was born in 1813 at a small village in Lanarkshire, Scotland. His parents were humble folk, and at the age of ten young Davie had to begin earning his living in a cotton mill. After a long day at the loom he would work away hard at Latin grammar and other studies until his mother ordered him to bed. Such money as he could save from his meagre wages he spent on attending evening classes in Glasgow. In this way he learned a good deal of Latin, Greek, theology and medical science.

When twenty-five years old he went to London, and walked the hospitals, besides going through a course of theological studies; and by the year 1840 had qualified himself for being sent out as a medical missionary by the London Missionary Society.

Livingstone's ambition was to go to China. But the Chinese War having broken out, the Society despatched him to Dr. Moffat's mission at Kuruman, in Bechuanaland, South Africa. The young man was greatly disappointed

Y Y



Specially drawn for this work.

In 1853 Livingstone, with some faithful natives, set out for St. Paul de Loanda. For a thousand miles the little party forced their way through swamps and forests and over mountains. For six months Livingstone, ravaged by fever, crowded his note-books with interesting facts. At last, more dead than alive, he reached Loanda.

but he acted up to the motto which he gave to others: "Fear God and work hard."

On arriving at his post he at once separated himself from his British companions and lived among the natives for six months to learn the language, habits and ideas of the people for whom he was to work. The experiment, though not an entirely pleasant one, proved very valuable to him. Being a man of wide sympathies and

great goodness of heart and very energetic and physically tough into the bargain, Livingstone soon won the respect of the Africans. This he never afterwards lost. One of the gentlest of men, wherever he went he earned the love and devotion of those who got to know him. Where others would threaten, Livingstone used a tact which carried him safely through many perils and softened the most refractory of chiefs. For many years after his death he was mourned throughout a district as large as Europe.

Attacked by a Lion.

Livingstone adopted the plan of starting a mission and, when it was well established, leaving it in charge of a convert, while he shifted further on. In the course of a few years he had worked northwards to a place 200 miles from Kuruman. Here he was attacked by a lion, but escaped with a broken arm. Though the wound troubled him for the rest of his life, the escape increased his influence over the natives. Whenever he moved, a whole tribe followed him.

One chief offered to convert any of his tribesmen with a hippopotamus hide whip, if they showed any unwillingness to accept Christianity! It need hardly be said that the offer was refused.

The Kalahari Desert.

Livingstone married Dr. Moffat's daughter, after building for her a house which the local chief pronounced to be not a hut, but a "hill full of caves."

The missionary was now on the

southern edge of the great Kalahari desert. This almost waterless expanse measures 400 miles from north to south, and as many from east to west. Its vegetation consists of queer plants growing from great tubers deep in the ground, and dwarf and very prickly shrubs. Rain, when it comes, produces in some places a plentiful crop of water melons.

Accompanied by two sportsmen, Livingstone set out in June, 1849, to cross this forbidding tract in search of a lake said to be on the northern fringe of it. The journey was made successfully, and from Livingstone's pen came the first account of the Kalahari ever written. On the northern edge of the desert they discovered the river Zuga, and Lake Ngami, into which it widens. This was the first of five lakes discovered by Livingstone during his many years of exploration.

The next year the journey was repeated; and in the year after that (1851) Livingstone crossed the Zuga and pushed northwards till he struck the great river Zambezi at Sesheke. He also made acquaintance with two very unpleasant things.

Across the Continent.

The first of these was the tsetse-fly, the bite of which is fatal to domestic animals, and infects human beings with the deadly disease named sleeping sickness. The second was malarial fever in a very severe form. Livingstone's plan of bringing his wife and family into these regions, therefore, had to be abandoned. In 1852 he took



Specially drawn for this work.

Livingstone fired at the lion, but the first shot was ineffective and the animal then attacked the missionary, biting him in the shoulder and breking his left arm. Later the lion attacked Livingstone's spearman, after which the creature dropped dead.

them down to the Cape and sent them back to England.

On returning to Bechuanaland Livingstone found that in his absence Boers had seized or scattered his native friends, plundered and wrecked his house, and carried off all portable property to pay their expenses, as they said! Even his precious medicine chest had not escaped destruction.

This disaster decided Livingstone to seek a way into Central Africa which should not pass through Boer territory. In 1853 he started from Sesheke, on ti.

Zambezi, with some faithful natives for St. Paul de Loanda, on the western coast, in Angola, a Portuguese possession. Livingstone had by now decided to become less of a missionary and more of an explorer, though his object—to help the Africans—remained the same. For a thousand miles the little party forced their way through swamps, forests and mountains. For six months Livingstone, ravaged by fever, crowded his note-books with interesting facts. At last, more dead than alive, he reached Loanda.

While the Portuguese nursed him back to health, his followers saw—to them—wonderful things: “stones that burn” (coal), and “canoes like houses” (ships). What, perhaps, surprised them still more was that they were not seized and sold into slavery.

As soon as he was strong enough, Livingstone retraced his steps to the Zambezi. The Loanda route was, he saw

plainly enough, too difficult to be of use. So he decided to follow the Zambezi to its mouth, in the hope that it might serve as an entrance from the eastern coast.

The Victoria Falls.

Early in the journey he made a really great discovery, the mighty falls which he named after his Queen. His emotion was intense when he, first of white men, gazed upon the Victoria Falls, plunging 400 feet over a brink nearly a mile long. “The Smoke that Sounds” was the native name. From a distance Livingstone had noticed five columns of spray so high that they seemed to mingle with the clouds. “They were white below,” he wrote, “and higher up became dark, so as to simulate smoke very closely.” The explorer was amazed by the beauty of a scene, which, as he says, “must have been gazed upon with rapture by angels in their flight.”



Central West

FIGHTING FOR FREEDOM

This illustration shows us a second of the sculptures at the Scottish National Memorial to David Livingstone. It was presented by the Anti-Slavery Society, and is called “Mercy,” because it brings home to us the stern campaign which Livingstone waged against the wicked slave trade.



Central News

WHEN COURAGE IS REQUIRED

Another panel at the Scottish National Memorial is called "Courage," and shows us David Livingstone fearlessly facing armed and savage natives. Livingstone was born at a small village in Lanarkshire, Scotland. His parents were humble folk, and he began to earn his living in a cotton mill at the age of ten.

Tearing himself away regretfully, Livingstone pushed on down the river and reached the coast safely, but as thin as a skeleton, in May, 1856. In two and a half years he had crossed the continent—half of it twice—and made one of the most wonderful journeys of which there is record.

The Great Lakes.

On arriving in England the explorer found himself famous and a "lion." He wrote a book telling of all his adventures and discoveries. It sold so readily that Livingstone could have retired on the proceeds. But his wrath had been aroused by the sickening horrors of the slave trade which he had witnessed, and he was anxious to return and do what he could to suppress it.

In 1858 he was back in Africa, no longer attached to the London Mis-

sionary Society, but as H.B.M. Consul of the East African Coast, and in command of an expedition commissioned to explore the Zambezi thoroughly. He had already seen enough to dispel the widely-held belief that the interior of Africa was one vast sandy desert. During the next six years, with the help of a little steam launch, the *Ma-Robert*, he explored the Shire River, a large tributary of the Zambezi and discovered Lakes Nyassa and Shirwa. The first of these, like Lake Tanganyika further north, lies in a great cleft which runs north and south through Africa. He also went up the Zambezi to Sesheke; and explored the River Rovuma, which flows from Lake Nyassa to the east coast.

Then his wife came out with the purchase of a launch, the *Lady Nyassa*, which had had built at his own expense, she died soon afterwards. Arab sl-



A MOST HISTORIC MEETING

LEA

When matters were looking very black for Livingstone a servant ran up shouting : " An Englishman ! I see him ! " The American flag at the head of a caravan appeared, and soon Livingstone was clasping hands with Henry Moreton Stanley, the travelling correspondent of the *New York Herald*, who had been sent to find him. The historic meeting took place at Ujiji, Lake Tanganyika.

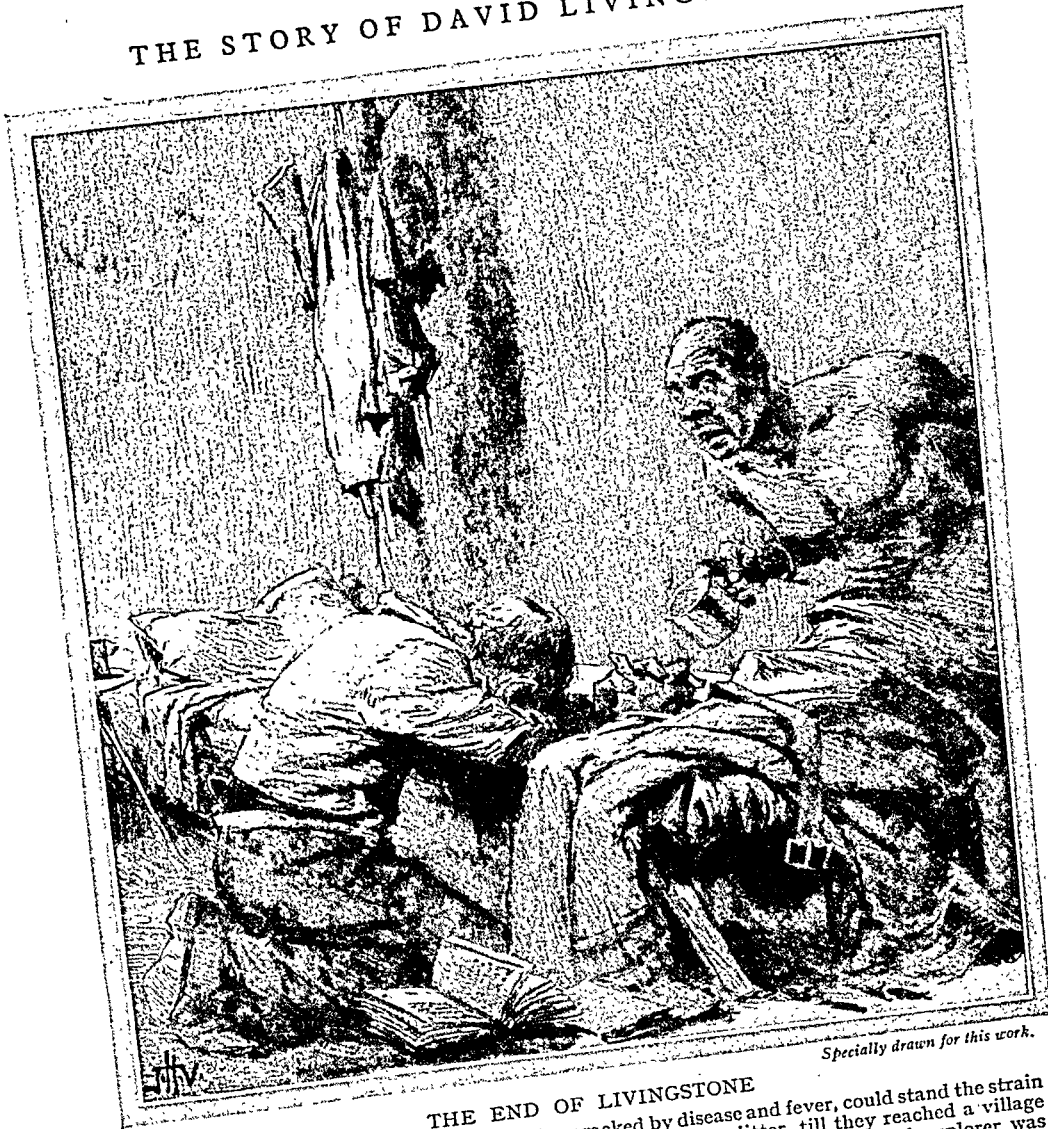
traders, whose wickedness was winked at, if not actually encouraged, by the Portuguese, followed Livingstone's tracks, burned villages, and carried off the inhabitants into slavery. Missions which had been established were wiped out by disease, and at last Livingstone in despair left Africa. Being unable to sell the *Lady Nyassa* he steered the tiny vessel across the Indian Ocean to Bombay, where he found a purchaser.

Returning to England in 1864, he wrote a second book. He could not, however, rest. In 1866 he began his third journey of exploration. This time he worked up the Rovuma, struck overland to Lake Nyassa, and from its northern end travelled north-west to the southern end of Lake Tanganyika. Thence he made a sweep south-westwards, and discovered two more lakes, Moeru and Bangweolo. Not satisfied with having put five lakes on the map,

he returned to Lake Tanganyika, followed its western shore and crossed to Ujiji on the eastern shore. After a short halt he recrossed the lake and penetrated the country north-west of it for some hundreds of miles, greatly harassed by Arab slave-dealers, with the infamous Tippoo Tip at their head. At last his supplies gave out, and he had to struggle back to Ujiji for more. On arriving there he found that a merchant had stolen and sold them.

An Historic Meeting.

Things were looking very black indeed when a servant ran up shouting " An Englishman ! I see him ! " The American flag at the head of a caravan appeared, and soon Livingstone was clasping hands with " Henry Moreton Stanley, the travelling correspondent of the *New York Herald*, sent by James Gordon Bennett, junior, at an expense



Specially drawn for this work.

THE END OF LIVINGSTONE

Even the iron constitution of the explorer, long racked by disease and fever, could stand the strain no longer. For days his faithful attendants carried him on a litter, till they reached a village south of Lake Bangweolo. Here, on May 1st, 1873, the great missionary and explorer was found dead kneeling beside his bed in an attitude of prayer.

of more than £4,000 to obtain accurate information about Dr. Livingstone if living, and if dead to bring back my bones."

News from Home.

This was in October, 1871. Stanley (afterwards knighted for his services as an explorer) brought not only much-needed help, but news of the defeat of

France by Germany, and of the successful laying of an Atlantic cable, about which no whisper had reached Livingstone.

In Stanley's company Dr. Livingstone explored the country north of Lake Tanganyika. Stanley urged him to come back to England, and Livingstone wished to clear up some points about the great rivers

Central Africa, and said farewell to him at Tabora, where he waited several months for supplies sent up from the coast.

When these arrived he set out on the journey of exploration fated to be his last.

His goal was Lake Bangweolo and the country beyond. The going near the lake was terrible, the whole country being like a vast sponge. Even the iron constitution of the explorer, long racked by disease and fever, could stand the strain no longer. For days his faithful attendants carried him on a litter, till they reached a village south of the lake. Here on May 1st, 1873, the great explorer was found dead kneeling beside his bed, in the attitude of prayer.

A Noble Journey.

His devoted native servants debated what to do. It was at once decided to transport the body to Zanzibar, nearly 1,000 miles away. The body was embalmed in the best manner possible and packed in a bark covering.

This was swathed in linen, tarred outside. Livingstone's heart was buried under a tree, whereon his name was engraved.

Starting for the Coast.

The sad procession, under the leadership of Susi and Chuma, two of Livingstone's oldest followers, started for the coast in May. Six months later they fell in with a relief expedition under Lieutenant Cameron, and in February, 1874, reached salt water at Bagamoyo, near Zanzibar. For nine months the gallant little band had carried their dead master's body, and boxes containing his notebooks and instruments, through perils of all kinds, often running great risks of being murdered by hostile tribes. What a man Livingstone must have been to inspire such fidelity! And how worthy was such fidelity of its success! And how right it was that Susi and Chuma, on whom the chief responsibility had fallen, should have been present in Westminster Abbey when at last Dr. Livingstone was laid to rest under its roof.



Central News.

THE LAST DAYS

Towards the end of his days Dr. Livingstone was carried along in a litter by his devoted followers, and this is the subject of a panel called "Endurance" in the Scottish National Memorial. This particular panel was the gift of King Khama's tribe, South Africa.

A VOYAGE ON THE COLORADO



The boats started off the same day, carrying ten men into unknown dangers wrecked by rapids in the very first canyon entered. *Specially drawn for this work* One boat was

FOR more than 1,000 miles the great River Colorado, in the United States, flows through very deep narrow valleys called canyons, which in the course of ages it has eaten through the table-lands of Utah and Arizona. To right and left rise towering cliffs, which in the Grand Canyon average 4,000 feet in height, for over 200 miles, and in places are over a mile high.

In the Sunless Depths.

It is impossible to approach the river where it passes through these mighty gorges, and the only feasible way of exploring this part of it was to travel through on its surface.

In 1867 a Major John Wesley Powell decided to pit himself and a small band of followers against the perils that well might lurk in the almost sunless depths of the canyons. Accordingly he had four specially strong boats built for him, each with a watertight compartment fore and aft, like a lifeboat.

To Dangers Unknown.

The boats and supplies were launched on May 24th, 1869, at Green River, Wyoming, and started off the same day, carrying ten men into unknown dangers.

One boat was wrecked by rapids in

the first canyon entered, but nobody was drowned. The crews were redistributed and the remaining boats pushed on. Two canyons were traversed without accident. In Desolation Canyon the leader's boat upset and was almost lost, but after a struggle its occupants brought both it and themselves safely to land.

Famine Threatened.

The expedition was swept down safely by the rapid current to the point at which the Grand River joins the Colorado. Here a halt was made to take stock of the provisions, which had been reduced greatly by the loss of the one boat. The disquieting fact revealed itself that, unless quicker progress was made, famine would soon stare them in the face.

The next gorge, Cataract Canyon was, as its name implies, full of dangerous rapids. Again and again the boats had to be unloaded and carried past dangerous points. For the second time Powell's boat capsized; and again loss was suffered. Two more canyons were "shot" safely, and then Major Powell's party found themselves, with a month's rations left, at the entrance to the most formidable gorge of the Grand Canyon. The men

talked as cheerfully as ever, and even cracked jokes; but Powell confesses in his diary that the anxiety he now felt made the cheerfulness sombre and the jokes ghastly.

A Costly Decision.

With anxious hearts the brave ten entered the gloomy portals of the canyon, the sides of which towered a mile towards the sky, cutting them off completely from human aid. Presently they heard a loud, steady boom, as of a great waterfall, echoing in the gorge, and before them they saw a sheet of foam a third of a mile long and reaching to the rocks on both sides. They could not stop nor land, so the only possible course was forward. The boats soon filled with water, but their safety compartments ensured that they kept afloat, and in a few minutes the danger was past.

Caught in an Ambush.

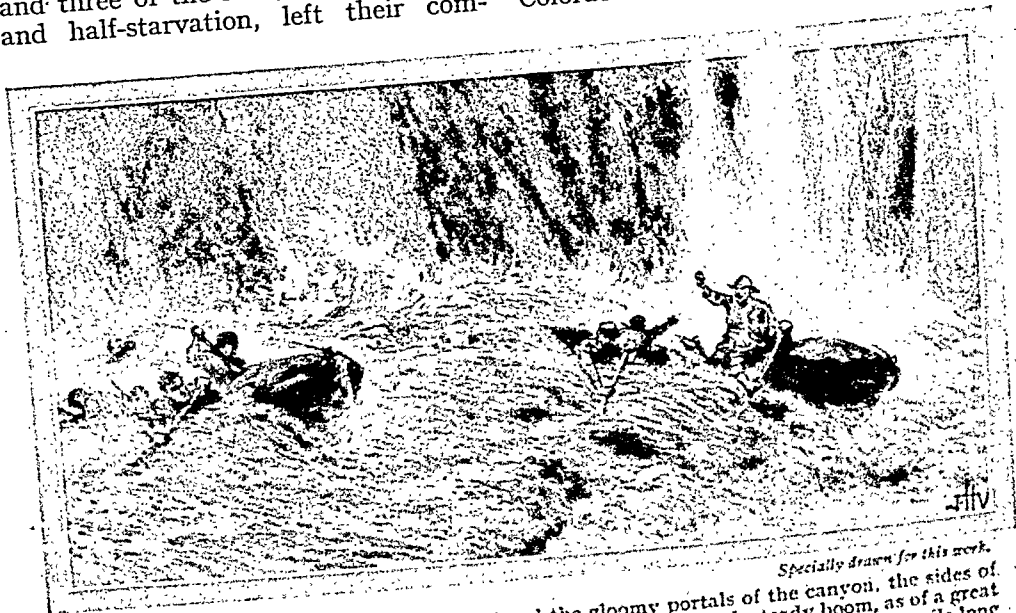
But nerves had been sadly shaken, and three of the men, weary of perils and half-starvation, left their com-

panions, managed to scramble up the cliffs, and reached the plains above. Their decision cost them dear, for they were ambushed and killed by Indians. Had they but stuck to the boats, all would have been well, for soon afterwards the remaining seven emerged safely from the gorge of the Colorado, the first men ever to traverse it alive. When at last they fell in with white men they had just 3 pounds of food apiece in hand.

Against Great Odds.

They might well be proud of a unique feat, entered upon with the certain knowledge that the chances were greatly against their surviving the voyage. To get the full measure of their achievement one should take into account the fact that the speed of the Colorado is at times over twenty miles an hour!

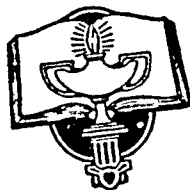
One must not confuse this river with the Eastern Colorado in Texas, or with the stream of the same name in Argentina. Usually the watercourse with the mighty canyon is called the Colorado River of the West.



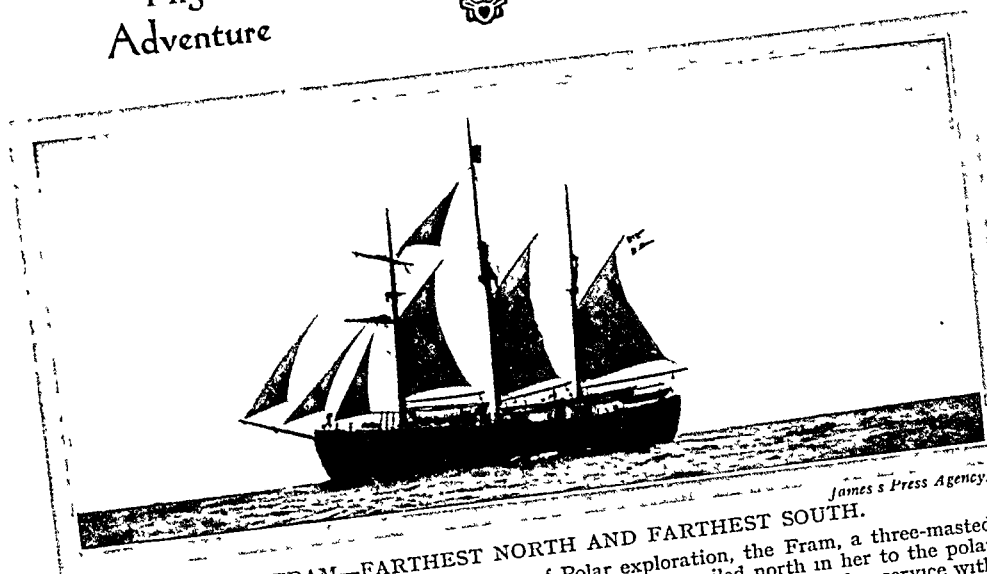
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Specially drawn for this work.

True Tales
of
High
Adventure



The Conquest
of
The Poles



James's Press Agency.

THE FRAM—FARTHEST NORTH AND FARTHEST SOUTH.

One of the most famous ships in the history of Polar exploration, the Fram, a three-masted schooner of 402 tons, was built for Nansen in 1892. Nansen sailed north in her to the polar regions in 1893. Sverdrup used her in 1899 in Baffin Bay and she saw still further service with Captain Amundsen on his successful expedition to the South Pole in 1910-12.

WITH NANSEN AND PEARY

WHY should men have wished to reach the Poles? Why should they desire to scale the world's loftiest peaks? The explorers who sought a way round Africa and Cape Horn, and faced the terrors of the North-west and North-east passages had a definite reason for their voyages. Success promised material gains. India and the East beckoned.

But the Poles and high mountain peaks afford at best a chilly welcome. The approach to them is beset with perils and hardship. When reached, they must be quitted without delay, and the retreat is no less dangerous and trying than the approach.

Explorers and their Work.

Fortunately for mankind, the desire to achieve is not based entirely on gain,

or on the search for honour and renown. Many men are ready to pit themselves against the difficulties for the sheer pleasure of overcoming them, through the love of adventure into the unknown through the wish to do something which has not been done before. Explorers who set out to fight their way to the Poles were animated by just the same spirit as urges a boy to climb a tree because it is high, or to scale a cliff because it "takes some doing." Perhaps the true explorer is an observer as much as a doer. He regards it as part of his work to bring back with him records which will add something to the store of human knowledge. At the time these records may seem to the general public to be of little value. But in the end the exertion and risk which they represent is sure to be justified.



Reproduced from "Farthest North" by permission of Messrs Constable & Co

AT SUPPER IN THE FRAM

Members of Nansen's expedition. Reading from left to right Scott-Hansen, Johansen; Nansen; Pettersen, Nordahl; Amundsen; Bentzen; Juell, Henriksen; Mogstad; Jacobsen, Blessing; Sverdrup.

This is not the place to give even a summary of Arctic exploration. We are concerned only with its final chapters.

Dr. Fridtjof Nansen.

In the year 1893 Dr. Fridtjof Nansen, the famous Norwegian explorer of Greenland, which he was the first man to cross from coast to coast, sailed from Christiania in the *Fram* with the definite object of reaching the North Pole. The *Fram* had been built specially to withstand the tremendous crushing power of ice floes. She had sides 28 inches thick, of the toughest wood, supported inside by great cross-beams; and was so shaped below the waterline that, if severely squeezed, she would be lifted by the ice. Nansen's plan was to sail and steam to the New Siberia Islands off

the north coast of Asia in longitude 140° E. and, when winter came on, to allow his ship to be frozen into the ice. It was his belief that the currents would carry the ice, and the *Fram* with it, across or near the Pole. A daring scheme this, since it depended largely on the staunchness of the ship. If she should be crushed the fate of the expedition might be sealed. But every possible precaution was taken, and when the *Fram* left port she carried a crew of twelve picked

from hundreds of applicants, and an abundance of food and contrivances for making life safe and comfortable in the Arctic.

A Dash for the Pole.

By October, 1893, the *Fram* was frozen in, as planned, and began a drift



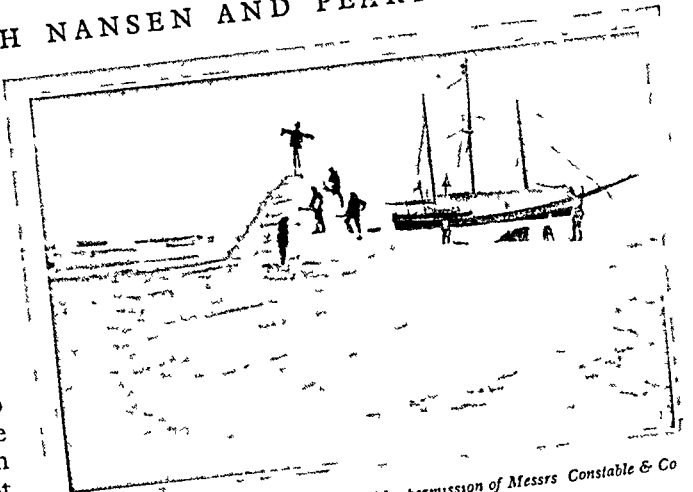
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NANSEN TAKES A WALK

This photograph, taken on the 6th July, 1894, shows Nansen out for exercise. The picture gives us a good idea of the dreary waste of snow and ice which the explorers had to cover in the course of the expedition.

that lasted nearly three years. Any doubts as to her being able to stand ice-pressure were soon put to rest, for she behaved admirably, rising when squeezed, and sinking again when the pressure lessened. The progress of the *Fram* was not, however, so satisfactory, for the currents carried her in all directions, and not steadily northwards as had been hoped. After two winters spent in the grip of the floes, Nansen decided to make a dash for the Pole with one companion, Lieutenant Johansen, of the Norwegian Naval Reserve, and three dog teams.

On March 13th, 1895, the little expedition set out. It had to traverse 450 miles of ice to reach the Pole, and as many to retrace its steps. There



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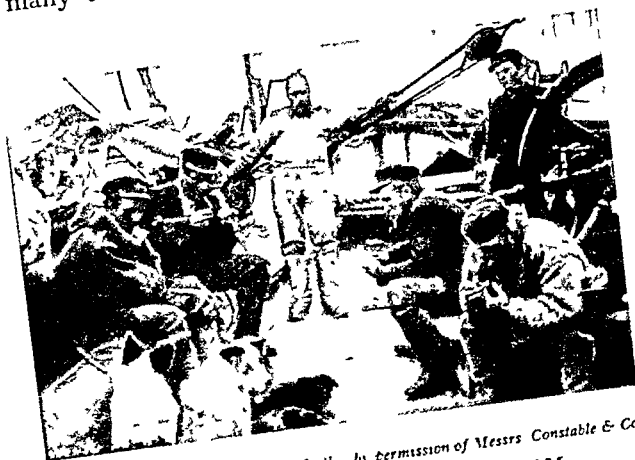
SCOTT-HANSEN'S OBSERVATORY

Segard Scott-Hansen was in charge of the meteorological, astronomical and magnetic observations in Nansen's expedition. Nansen tells us that Scott-Hansen built for himself a little observatory of snow in which he could manipulate his instruments with some degree of comfort. The temperature in the observatory was 20° below freezing point

was little hope of its being able to rejoin the ship.

It quickly became clear that the two men could not possibly cover the distance. The going was far too bad, and the dogs soon became exhausted.

But they did not turn back before reaching, in latitude $86^{\circ} 14' N.$, a point about 260 miles from the Pole, and so beating easily all previous records. The retreat was full of adventures and great hardship. Johan. was nearly killed by bear, and Nansen nearly drowned while rescuing the canoe which got adrift in an open channel. After wintering in an island north of Franz Josef Land, the two men luckily fell in with a British expedition, which reached Norway safely at about the same time.



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SUNDAY AFTERNOON ON THE FRAM

A few hours of leisure on the decks of the *Fram*, crowded with gear and the dogs of the expedition, marked the observance of the Lord's Day. Such simple joys as a pipe of tobacco and the society of tried friends were among the few luxuries granted to the gallant men of the expedition.

as the *Fram*, which had escaped from the ice in good condition.

Nansen's record was beaten by a few miles in 1900 by Captain Cagni, a member of the expedition under the Duke of the Abruzzi.

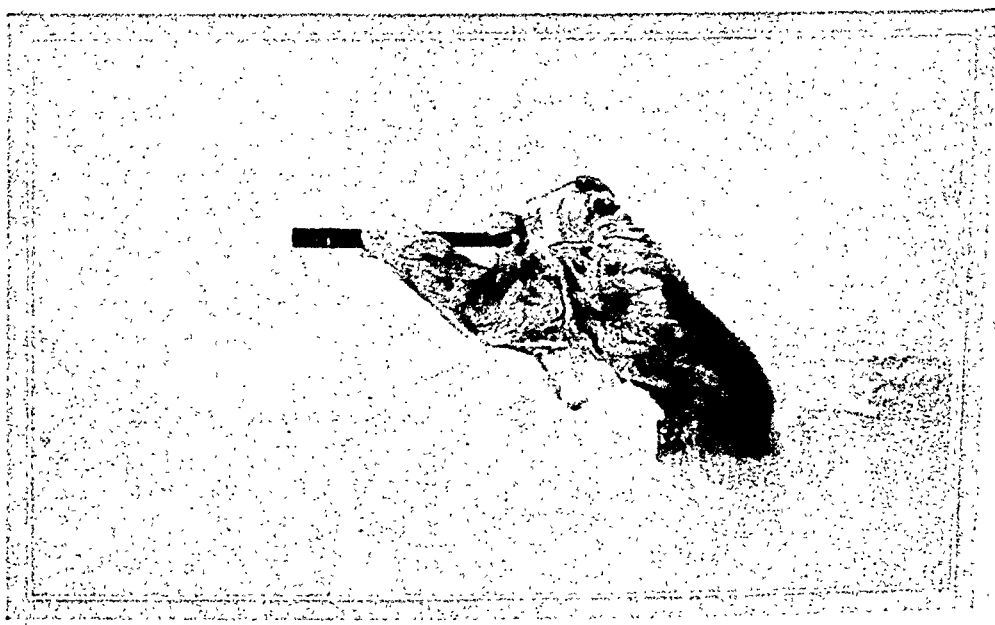
Commander Peary.

It was left to Commander Robert E. Peary, of the United States Navy, to succeed where others had gallantly failed. No man better deserved success, for Commander Peary had paved the way to it by many years of exploration. In 1891-92 he had proved Greenland to be an island. After further travels, he had acquainted himself with the northern coast of Grant Land, to the north-west of Greenland, and by 1895 had fixed upon it as the best jumping-off place for an attack on the Pole itself.

He started on his first attempt in 1902. This had to be abandoned at an early stage, but it gave Peary valuable

experience. A Peary Arctic Club had been formed during his absence from home, and the members of it furnished him with a new ship, the *Roosevelt*, built specially for fighting ice, like the *Fram* before her. In this vessel, commanded by Captain Robert A. Bartlett, a British seaman from Newfoundland, he sailed from New York on July 16th, 1905.

At Cape Sheridan, in Grant Land, the ship was berthed, stores were landed, huts were built, and hunting parties sent out to collect meat. During the winter everyone found plenty to do in making preparations for the "dash" in the coming spring. When February, 1906, arrived, a start was made from Cape Sheridan. The men travelled in a series of seven parties, forming a chain of caches, or stores, of provisions and other necessities at intervals, so that Peary and the men taken with him in the final spurt should have a safe line of retreat.



COMMANDER PEARY

Robert Edwin Peary was born on May 6th, 1856, and entered the U.S. Navy. He made a study of Arctic exploration and in 1902 and 1905 made unsuccessful attempts to reach the North Pole. He made a third attempt in 1908 and, the victor at last, reached the North Pole on April 6th, 1909. He died at Washington on February 19th, 1920.

WITH NANSEN AND PEARY

But despite his precautions, the explorer was not to succeed this time. The weather became villainous; blizzards raged; the dogs fell dead with exhaustion, one after another; and the food supply dwindled rapidly. When he had reached $87^{\circ} 6' N.$, the farthest north yet—Peary, sorely disappointed, had to turn southwards again, when only about 200 miles from the Pole.

A Gallant Failure.

The retreat had begun none too soon. It was a race against starvation. Rather than retrace his outward track and pick up the stores deposited along it, Peary decided to save time by heading for Greenland, where there was abundance of game. When in the last extremity of hunger the party killed three hares—eaten raw—and soon afterwards they fell in with musk-oxen and so were able to keep themselves alive till they reached the *Roosevelt*.

In September, 1908, the *Roosevelt* reached Cape Sheridan again for another attempt. During the next few months a large amount of stores was transported to Cape Columbia, some distance along the coast of Grant Land to the westwards, which had been chosen as the base of operations. Winter quarters were again made at Cape Sheridan.



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FRIDTJOF NANSEN

Nansen was born near Christiania on October 10th, 1861. In 1888-89 he crossed Greenland from east to west and later, in 1893, he set out in the *Fram* upon his expedition to the north polar regions. In 1895 he made a dash for the Pole and reached $86^{\circ} 14' N.$, the most northerly point achieved up to that time.

In February, 1909, Command Peary sent Captain Bartlett ahead, in charge of an advance party, to make caches and prepare the way for a main party. The first few miles were over rough ice, and about 45 miles north of Cape Columbia the expedition was held up for six days by a belt of open water and broken ice. But

March 5th the sun began to appear, making things easier. As he advanced, Peary sent detachments that had brought up supplies back to the base, and at the 88th parallel, with about 130 miles still to cover, he parted with the last of his followers who were not to be "in at the death."

The Pole at Last.

For the last lap of the great race Peary kept with him Henson, a coloured man, four picked Eskimo, and forty dogs for pulling five loaded

sledges. Men and dogs were now in splendid physical condition, and Peary hoped to reach his goal in five marches of twenty-five miles each. A great deal, of course, depended on the weather and freedom from bad ice and open channels.

On this occasion good fortune stood by the explorer. Though the cold was intense—40° below zero—the weather kept fine and calm, and the ice was unusually smooth. Keyed up by excitement, the party pressed forward, contenting themselves with very short

rests in their sleeping-bags. Each day brought them the appointed distance nearer to the Pole; on April 5th, Peary took a latitude sight which showed them to be but thirty-five miles from it; a few hours later the North Pole was in sight!

"The Pole at last!" Peary wrote in his journal. "The prize of three centuries, my dream and goal for twenty years, mine at last! I cannot bring myself to realise it." To make certainty sure, Peary took a number of observations of the sun, and then raised a mound of snow on which was placed the Stars and Stripes. For the first time men had reached a part of the earth's surface on which east and west and north no longer existed, for in whatever direction they stepped from it they stepped south.



ESKIMO MOTHER AND CHILD

Commander Peary held the Eskimo in high regard. He employed them in his sledge parties and gave them credit for a remarkable degree of intelligence. Of them he has said that "in temperament like children—the best of them are faithful unto death."

WITH NANSEN AND PEARY

Early on the return journey Peary made a hole through the ice, and dropped his sounding wire through it. It ran out to its full length—9,000 feet—without touching bottom, thus proving that the North Pole is surrounded by deep water, and not, as is the case with the South Pole, by high ground. There is no Arctic Continent.

Deep Water at the Pole.

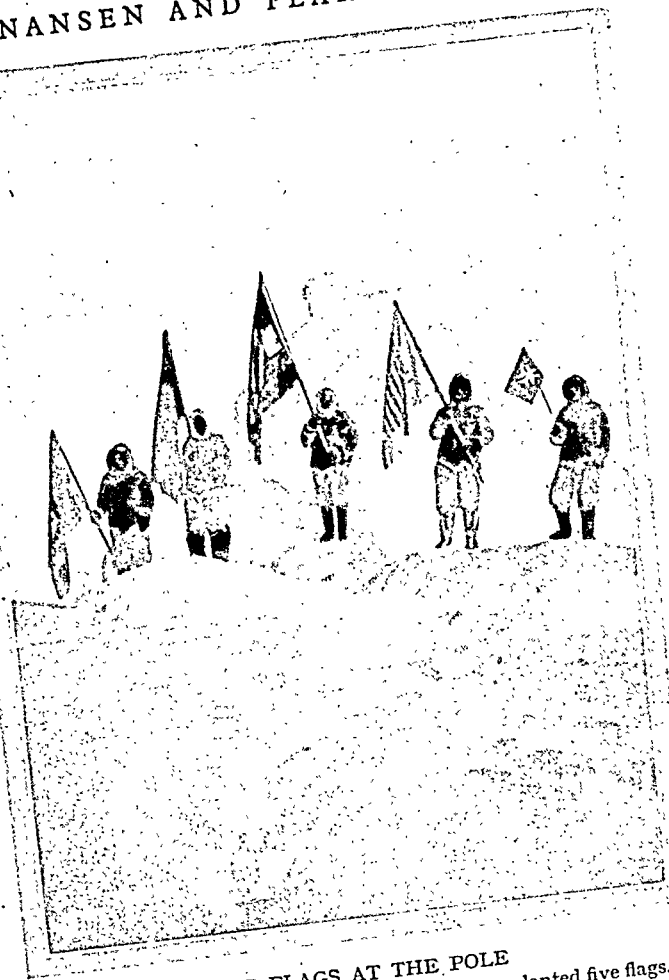
It had taken Peary thirty-seven days of travelling from his base to reach the Pole. The return trip was made in sixteen days. This was wonderful going. But it is interesting to compare the time with that of the next journey to the Pole and back. On May 9th, 1926, two Americans, Lieut.-Commander R. E. Byrd and F. G. Bennett, left King's Bay, Spitzbergen, in

a three-engined aeroplane. Eight hours later they were over the Pole, which they circled; and at the end of eight more hours were back at their base, having covered 1,600 miles. Two days afterwards the Italian airship *Norge*, starting from Spitzbergen, crossed the Pole on its way to Point Barrow, in Alaska.

Nor is the tale of the North Pole quite told. In July, 1897, Salomon Andr  , a Swedish aeronaut, decided to make a dash for the Pole. With two

staunch companions he set off in specially-prepared balloon.

Time passed, a period of great anxiety for the fate of the intrepid trio. Some of the buoys they dropped were found and expeditions started to discover the missing men. Then, three years later, in the summer of 1930, the remains of the explorers found preserved in the eternal ice reverently brought back to Troms   interment.



THE FLAGS AT THE POLE

On arrival at the North Pole, Commander Peary planted five flags. That in the centre of the picture is an American flag of silk given to the explorer by his wife. He left a fragment of the flag at each of his earlier "farthest norths" and in all his expeditions he carried it wrapped about his body.

HEROES OF THE ANTARCTIC



WITHIN THE ANTARCTIC CIRCLE

Herbert G. Ponting, F.R.G.S.

No photograph could possibly give you a better idea of how utterly remote from the haunts of man Antarctica really is. This picture was taken during the British Expedition of 1910, and the explorers are looking across the waste in the direction of the volcanic Mount Erebus. This mountain took its name from one of the ships in the Ross Expedition of 1840-42.

THE Antarctic Circle, inside which lies practically all of that great continent now called Antarctica, is much more remote from the haunts of men than is the Arctic Circle. The first misses the nearest point of a continent—Punta Arenas in Patagonia—by many hundreds of miles; the second passes through continental land during most of its course. The Arctic is, therefore, much “handier” for exploration than the Antarctic, and thus accounts for the fact that the Antarctic Circle remained unvisited until 1773, when Captain James Cook took his little *Resolution* across it. Fifty more years passed before land was sighted in Antarctica, and not until Cook’s voyage was well over a hundred years old did a human being set foot on the continent.

The history of Antarctic exploration falls into two main parts, separated by about half a century. The first begins with Captain Cook’s expedition and ends with that sent out under Captain (afterwards Sir) James Clark Ross in 1839. During this period names were given by Biscoe, Kemp, Wilkes, Bellingshausen, D’Urville and others to land sighted at different points on

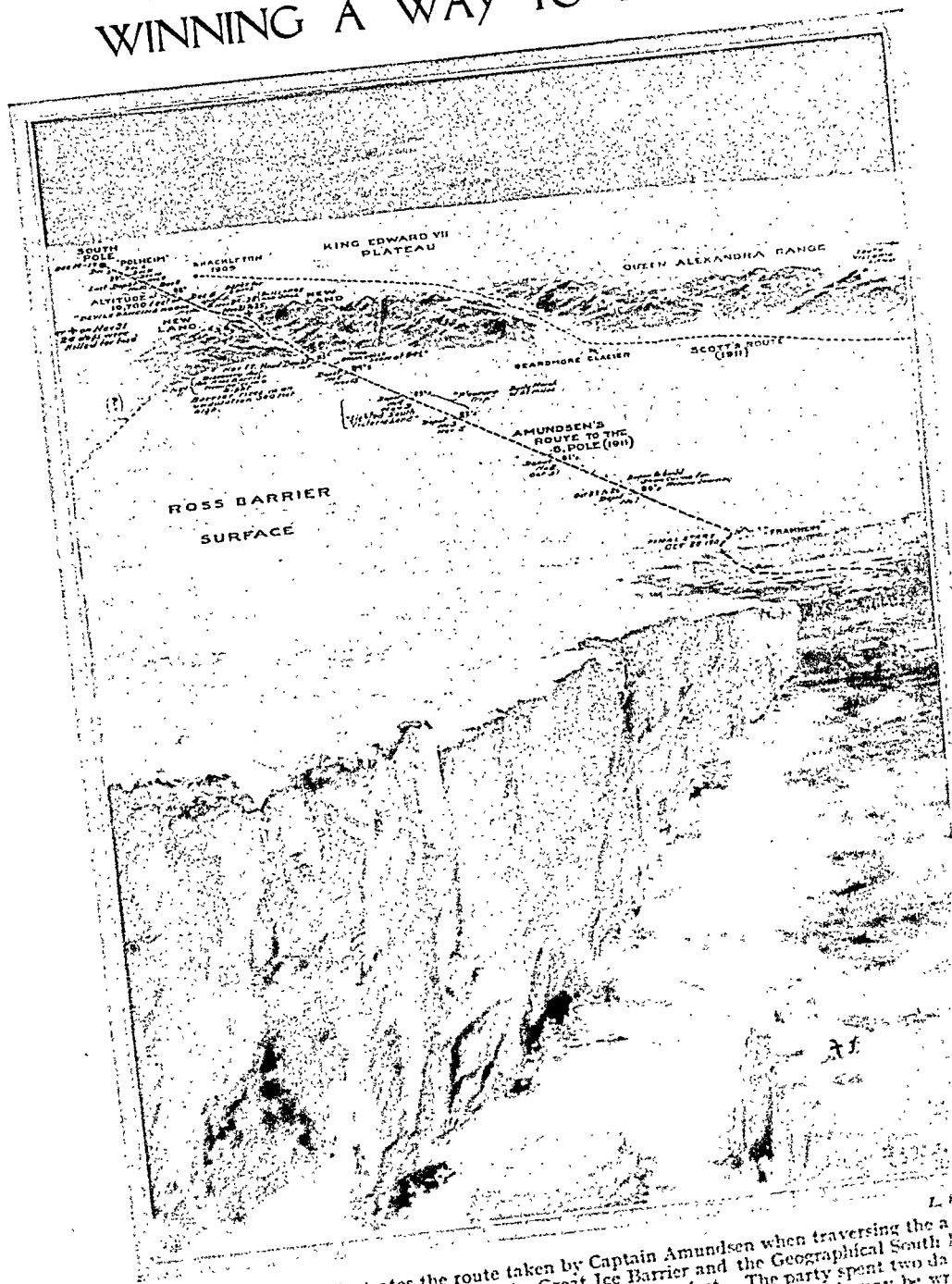
what was supposed to be the rim of the still but very vaguely mapped southern continent.

Ross’s Exploits.

By far the most important discoveries of this time were those made by the English Antarctic Expedition under Ross, during the years 1840-42. From his base at Hobart Town, in Tasmania, Ross took his two ships, the *Erebus* and *Terror*, south-eastwards. He presently sighted high land in the same longitude as New Zealand, and named it Victoria Land after his Queen. Rounding a promontory, dubbed Cape Adare, he turned southwards till he came abreast of two volcanoes, given the titles of Mt. Erebus and Mt. Terror, after his vessels. The first of these is still active.

Soon afterwards Ross reached the Great Ice Barrier, the largest known ice-sheet in the world, stretching at least 400 miles east and west and as many north and south—an expanse almost equal in area to France. It is well worthy of its name, for its seaward edge is an almost unbroken perpendicular wall of ice, rising in places several hundreds of feet from

WINNING A WAY TO THE POLE



This pictorial map illustrates the route taken by Captain Amundsen when traversing the wastes between the Bay of Whales on the Great Ice Barrier and the Geographical South Pole. He stated that the Pole itself stood at an altitude of 10,500 feet. The party spent two days making observations and then set their faces homewards. Amundsen's dash may be written down as the shortest and most successful expedition that ever spent a winter in the Antarctic.

the water. Whether it is afloat or based on solid ground is a much-debated question. Ross did not turn about till he had passed latitude $78^{\circ} 10' S.$, thus making a record for "furthest south," which remained unbroken for more than fifty years.

In the "Southern Cross."

Apart from the *Challenger* expedition in the 'seventies, the Antarctic attracted very little attention till the last decade of the century, when interest in it began to revive. A Norwegian expedition left Europe in 1895, and two years later a Belgian ship investigated the Graham's Land region opposite Cape Horn. In 1898 a British expedition, financed by Sir George Newnes, sailed for the Ross Sea in the *Southern Cross*. The leader, Mr. C. E. Borchgrevink, a Norwegian, set up the Union Jack

in Victoria Land—the first flag to be planted in the Southern continent—and, following Ross's route, broke his record by over half a degree, reaching $78^{\circ} 50' S.$ On one occasion Borchgrevink and a companion had a narrow escape from being washed away from a cliff side by a huge wave created by a vast iceberg which suddenly broke away from a glacier-end.

The Voyage of the "Discovery."

With the present century began a series of British expeditions designed to advance knowledge of the Antarctic regions generally and to penetrate as far as possible into the mysteries of the continent's interior.

In August, 1901, the *Discovery*, a ship built specially for battling with Antarctic ice, left England. On board were the members of the British



A "LEAD" IN THE PACK ICE

Herbert G. Ponting, F.R.G.S.

Every exploring ship that essays to reach the Antarctic has to force a way through vast areas of pack ice, the fragments of which are known as "ice floes." The water lanes between the ice floes are called "leads" and it is through these leads that ships have to force their way. The ice-covered sea shown above is the normal highway to the Antarctic.

THE FREEZING OF THE SEA



Herbert G. Ponting,

The sea in the Antarctic begins to freeze over about the end of February, but as this most tempestuous region in the whole world the fierce winds which blow so frequently break up the young ice which forms during the brief periods of calm. In this picture ice is seen forming on the surface of the sea during a comparatively quiet spell, and it is an excellent idea of the serene beauty of a moonlight night in the Polar regions.



Robert G. Ierling, I.R.G.S.

CAPTAIN SCOTT WRITING UP HIS JOURNAL

During the winter, when the Polar world is in darkness, for the sun disappears from sight for four months and almost incessant storms rage, every member of an exploring expedition busies himself about some special work or science or in preparations for the future. Captain Scott spent much of such time in writing up his Journal, and is here shown at work.

National Antarctic Expedition, under the command of Commander (afterwards Captain) Robert Falcon Scott, R.N. Six months later the expedition reached the Ross Sea. After coasting eastwards along the Great Ice Barrier for 700 miles, Scott landed and ascended to a height of 750 feet in a balloon brought for the purpose of making observations. As far as the eye could reach southwards extended an unbroken desert of ice. The voyage was continued for another 300 miles till, on the eastern side of Ross Sea, the expedition sighted high ground, to which Scott gave the name of Edward VII. Land. The ship was then put about, and headed for Ross Island on the western coast, where winter quarters were made.

As soon as the sun reappeared above the horizon, preparations were begun

for a dash polewards across the Great Ice Barrier, on a line parallel to the western shores of Ross Sea. As yet, of course, it was not known how far south the Barrier extended. Possibly it reached right to the Pole. Exploration alone could provide the answer.

With Failing Strength.

On November 2nd, 1902, Scott set off, taking with him Lieutenant E. H. Shackleton, R.N., and Dr. E. A. Wilson as his companions in the great adventure. Physical conditions were very bad, but far more serious was the breakdown of the sledge dogs, which, after a few days' work, began to sicken and die off one after another, throwing more and more of the hauling on to the men. The reason for this breakdown was undoubtedly unsuitable food. To make matters still worse, all three

HEROES OF THE ANTARCTIC

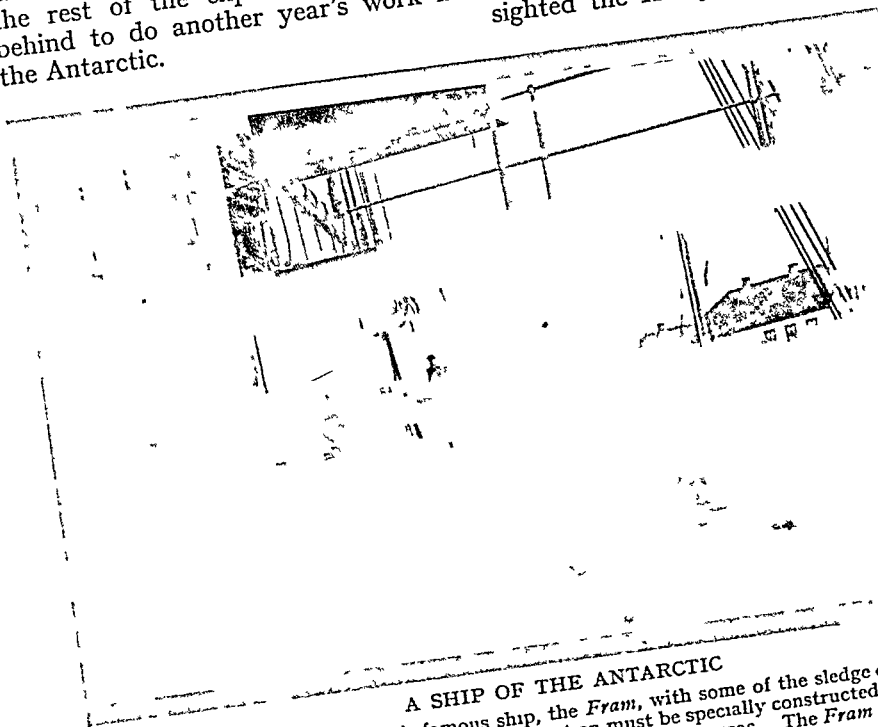
men were attacked by snow-blindness, in spite of the tinted goggles worn, and, a little later, by scurvy. On the last day of the year, when they had reached a point $82^{\circ} 16' S.$ and broken all records by over 200 miles, Scott found himself compelled to order a retreat. Only two dogs remained alive, provisions were very short, and strength was failing.

During the return journey the last of the dogs perished, Shackleton became too ill to do more than stagger along, and all the hauling fell to Scott and Wilson. On February 3rd, 1903, the party reached the base again, in the last stages of exhaustion. But they were cheered by the arrival of the relief ship *Morning*, on which Shackleton and eight members of the crew returned home, while Scott and the rest of the expedition remained behind to do another year's work in the Antarctic.

A Second Attempt on the Pole.

Ernest Shackleton was made of stout stuff. Hardly had he recovered from the effects of his polar journey when he began to organise another expedition. After some years of hard work and the overcoming of very great financial difficulties, he collected a sum sufficient to enable him to equip the forty-year-old *Nimrod* and gather men and material for further exploration of the Great Barrier region. Instead of sledge dogs, he took with him Manchurian ponies, which, he expected, would do better work. His outfit included another novelty in the form of a motor-sledge.

The *Nimrod* left England in August 1907, and made for Lyttleton, New Zealand. At that port she was taken in tow by the steamship *Koonya*, to save coal, and on the first day of 1908 set out for the Antarctic. As soon as the ice-pack fringing the continent was sighted the *Koonya* cast off. In



A SHIP OF THE ANTARCTIC

Here is a picture of Amundsen's famous ship, the *Fram*, with some of the sledge dogs such good service. Vessels for Antarctic exploration must be specially constructed so hulls can withstand the constant pressure of the pack ice in Polar seas. The *Fram* went North with Nansen and farthest South with Amundsen.

course the *Nimrod*, after much buffeting, landed the stores and expedition near Ross Island. This done, she steamed back to New Zealand to winter there.

The chief achievements of this expedition were the scaling of Mt. Erebus (13,000 feet), the locating and attainment of the South Magnetic Pole—in latitude $72^{\circ} 25' S.$, and the shifting of the "furthest South" record to a point within 111 miles of the South Pole.

The dash for the Pole began on November 3rd, 1908, when Shackleton, Lieutenant J. B. Adams, R.N.R., Dr Marshall and Frank Wild left the base, taking with them four sledges, each hauled by one pony. Of the original eight animals four had died since landing.

The route taken across the Barrier ice lay somewhat to the east of that selected by Scott. The ponies proved a failure, and when, after many days of hard marching, the party reached the southern limits of the Barrier, only one remained.

On the Barrier Edge.

Now followed a terrific scramble over the broken ice of the Barrier edge on to the most southerly land yet reached by man. After this came days of toiling up a glacier—now known as the Beardmore Glacier—in the course of which the last pony fell into a crevasse and was lost. The task of hauling the sledges now became almost heart-



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TAKING THEIR OBSERVATIONS

In describing what took place on his successful expedition, Captain Amundsen stated that "there was a brilliant sun. Four of us took observations every hour of the day's twenty four. We observed the position of the Pole as close as it is in human power to do with the instruments we had—sextant and artificial horizon." Meanwhile the beautiful silken flag of the party had been unfurled

FINDING THE SOUTH POLE



L.E.A.
To prove that he had actually reached the geographical South Pole it was necessary for Captain Amundsen to take bearings much as though he had been on shipboard, for the waste of snows all around was not unlike the waves of the sea. Here we see a member of the Expedition using the sextant. The image of the sun is brought down to the observer by means of the artificial horizon at which he is seen to be looking.



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LANDMARKS ACROSS THE ICE FIELD

In a vast and interminable waste of whiteness steps have to be taken, where necessary, to mark the safest and most suitable highways. This is done by means of great snow-heaps connected with lines and indicated by objects of a darker hue. Here we see "Pylon Avenue," leading to and from the stout ship *Endurance*.

breaking. During the ascent Wild made a great and very unexpected discovery—that of seven seams of coal, the first indication of what is now believed to be the largest unworked coalfield in the world.

A Dramatic Journey and a Tragic Finish.

At last the four men found themselves in a great inland plateau—King Edward VII. Plateau—9,000 feet above sea level. By this time they were almost collapsing with fatigue and underfeeding. Their courage and determination, however, took them forward to 88° 23' S., where the flag planted by Queen Alexandra was presented, before they turned back. After enduring much hardship, they reached their base, and only just in time, for the *Nimrod* had returned and was on the point of leaving, having given them up for lost.

In 1910 Captain Scott again took the field, at the head of what was perhaps

the greatest scientific expedition ever sent out from any land. His ship, the *Terra Nova*, had aboard her a remarkably efficient band of scientists, equipped with a correspondingly complete outfit of instruments and other apparatus. The extension of knowledge was, as usual, the main object of the expedition. Scott, however, intended, if possible, to finish the task begun by himself and so nearly completed by Shackleton—that of reaching the South Pole. The programme was splendidly carried out in all respects, and a mass of information collected.

The feature of the expedition which lingers most vividly in the public memory is the last journey of the gallant leader and his four equally gallant comrades; a journey at once successful and unsuccessful, and doomed to end in a disaster made glorious by the heroism of its victims.

A start for the Pole was not made till November 3rd, 1911. Nine months

HEROES OF THE ANTARCTIC

earlier Scott had learned that Roald Amundsen, the Norwegian explorer, was engaged on the same quest, having made his base at the Bay of Whales, 270 miles further east on the edge of the Barrier. On receiving this piece of news, which caused him great disappointment, Scott wrote in his diary: "The proper, as well as, wiser, course for us is to proceed exactly as though this had not happened. To go forward and do our best for the honour of the country without fear or panic." Scott realised that Amundsen enjoyed two great advantages: his base was sixty miles nearer to the Pole, and he had a large number of dogs with which he could start earlier than Scott, who, following Shackleton's example, was relying on pony transport. The loss of many of his ponies in March, 1911, delayed his departure a month. What this delay meant will be understood presently.

Every possible precaution was taken

to ensure the safe return of the party. A large dump of necessaries, called One Ton Depot, had been made at a point many miles south of the base during earlier months of the year. When at last he got away, Scott was accompanied or preceded by parties hauling provisions, which formed further depots at various places on the route. As these parties deposited their loads they were sent back: three men when 250 miles out, two men when 400 miles out, four at the top of the Beardmore Glacier, and three when the Pole was but 150 miles away. Scott kept with him only Dr. E. A. Wilson, Captain L. E. G. Oates, Lieutenant H. R. Bowers and Petty Officer E. Evans for the final dash.

Amundsen's Great Feat.

The Pole was reached on January 18th, 1912, but near it there stood a tent in which was a record bearing the names of Roald Amundsen and four



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FAST AMIDST ICE BOULDERS

This illustration will convey to you more forcibly than any words what the ice of the Antarctic stands for. Here you see the *Endurance*, which was specially constructed for her task, almost overwhelmed by the so-called "Pressure-ice."

other Norwegians, who had arrived on December 14th, 1911, just over a month earlier! They had started from their base a fortnight before Scott with sledges and forty-two dogs, and made very good progress over the Barrier ice.

A range of mountains, named Queen Maud's Range, was sighted and crossed by way of a glacier 200 miles south of the Beardmore Glacier. At a height of 7,000 feet all the dogs but eighteen were killed. By December 2nd the plateau had been reached, and travelling became easy for the rest of the way. On the forty-ninth day out the Pole was attained. After spending two days making observations, the party set their faces homewards, accomplishing the return journey in thirty-eight days. Neither men nor dogs suffered at all in health, and Amundsen's dash may be written down as the shortest and most successful expedition that ever spent a winter in the Antarctic. It had been a splendid effort, crowned with well-earned success.

A Tale of Disaster.

Scott's return journey, in contrast to that of Amundsen, was dogged by misfortune. Edgar Evans, physically the strong man of the party, had a bad fall on February 4th while on the plateau, getting concussion of the brain, and Oates' feet began to give out.

On the 17th Evans died. The delay caused by his breakdown had sealed the fate of all five. By March 16th Oates had reached the limit of his endurance; and, to avoid being a drag on the others, gallantly walked out into the night to his death. The three survivors struggled on till their food and fuel was exhausted. On March 21st they were within eleven miles of One Ton Depot—and plenty. Then came the cruellest stroke of all—a blizzard which raged for days, and did not end till all three had succumbed in their tent to their privations. Their bodies were found eight months

later. Wilson and Bowers lay as if asleep in their sleeping bags. Scott, who died last, had his coat open and his arm flung across Wilson. Under his shoulders was a wallet containing his precious notebooks, in which he had written almost up to the moment of his death. The last entry, made on March 29th, 1912, is as short as it is pathetic: "For God's sake look after our people."

A great cairn of ice was raised over the three, and at the place near which Oates was thought to have perished was raised a cross bearing the inscription: "Hereabouts died a very Gallant Gentleman, Captain L. E. G. Oates, of the Inniskilling Dragoons."

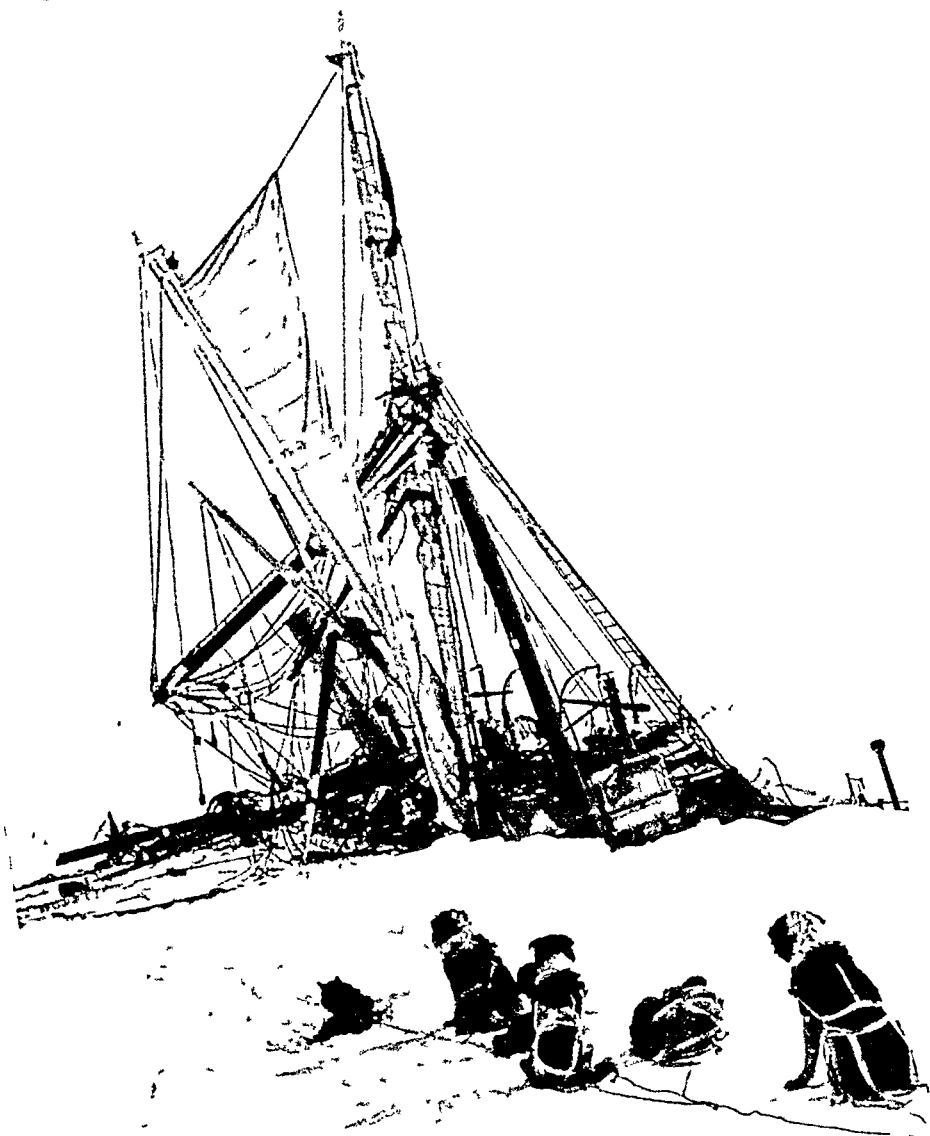
Later, at Hut Point near the base, a great cross was erected to the memory of all five men. On it as epitaph are the noble and fitting words from Tennyson's "Ulysses":

"To strive, to seek, to find, but not to yield."

Why do men risk their lives so readily in becoming heroes of the Antarctic? It cannot be for the monetary rewards they gain and each one of the great explorers has been so inherently modest that the efforts can scarcely have been made for fame. The one answer to the question, indeed, is that the South Pole has drawn these fearless, gallant men for no other reason than a sheer thirst for knowledge for the good of the world in general. There is always a fascinating mystery about the unknown, sufficient in itself to provide a lure for adventurers of the calibre of Captain Scott, Sir Ernest Shackleton, Roald Amundsen, and all the others of this glorious band.

To realise something of the trials and hardships of this region, let us consider the behaviour of the wind. In our own Fortunate Isles, if we should experience a gale blowing at 55 miles an hour, space would be devoted in the newspapers to describing the occurrence, with comments on the damage

THE END OF A GALLANT SHIP



The stricken ship pictured above is the ill-fated *Endurance*. She was commanded by Sir Ernest Shackleton and frozen in off the Caird Coast. From there she drifted northwards and was crushed in October, 1915. It was only after great difficulty and in face of extreme peril that the crew managed to reach safety. The heroic Shackleton died on board the *Quest* during a later Antarctic expedition.

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done, and details of disasters on land and sea.

Yet, in the Far South, the average velocity of the wind (probably charged with particles of snow and ice) is 50 miles an hour—that is what one would expect day after day. When a real Antarctic gale *does* rage, the wind blows at 100 miles an hour, which is more than most of the dwelling-houses and other buildings in this country could possibly withstand for long.

Midsummer in the Antarctic comes at the time of year when we keep Christmas. Down there amidst the eternal snows the sun shines not only all day, but all night as well—just as winter is five long, numbing months of darkness, with no sun whatever.

As for the sun, actually nearer to the surface of the earth than it comes at any other point or season, it is powerless to melt the dense coating of snow

and ice and also to impart warmth to the blizzard-charged air. To give you an example, one midsummer day at Ross Island, when brilliant sun rays sparkled on the gleaming ice, the thermometer was actually eight degrees below freezing point! To show you further what this means, we often pass through the English winter without the temperature falling much below this mark.

Nor must we forget that even when the sea is open as one approaches Antarctica there is little or no likelihood of "speaking" another ship. In these waters are no trade routes, no ocean highways. It is to every mariner the "back of beyond," and there is no magnet of commerce or population drawing to these cruel seas anything but the vessels of occasional explorers and those of the few whalers to whom this region is sometimes a hunting ground.



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INTO THE BLIZZARD OF DEATH

In the course of Captain Scott's return journey from the Antarctic, which was dogged by misfortune at every turn, Captain Oates reached the limit of his endurance. To avoid being a drag upon the remainder of his companions he most gallantly walked out into the raging blizzard and met his death. "A very Gallant Gentleman" was part of the inscription on the Cross placed near the spot where he perished so courageously.

True Tales
of
High Adventure



Famous Travellers
of
Our Own Time



Specially drawn for this work
Dr. Grenfell went ashore to find a tiny hovel, the roof covered with sods of earth. The floor was made of pebbles from the beach and the walls were reeking with damp. On a wooden bench a man lay gasping for breath, whilst his wife gave him sips of water in an iron spoon.

THE DOCTOR OF LABRADOR

THE queer thing about Labrador is that it is in the same latitude as England, yet instead of England's mild climate, it has nine months' savage winter and barely three of very uncertain summer.

In a Labrador Home.

The country itself is almost as ugly and gloomy as its climate. It is largely a waste of rock and scrubby forests with rapid rivers roaring through deep gorges. The soil is poor and it is difficult to grow any crops. You would not think that anyone could exist in such a country, yet there are a good many people who live by fishing, collecting furs and by mining. And such living! In the old days before Dr. Grenfell went to Labrador there was no help for any one who fell ill. They lived or died without medicine or doctor, and the children especially suffered dreadfully.

In the year 1892 Dr. Wilfred Thomas

son Grenfell, who had been working among the North Sea fishermen, was moved by the tales he had heard to visit Labrador. He arrived in summer, yet the sea was full of icebergs which flashed with every colour of the rainbow under the rays of the sun. On the very night of his arrival, before he had gone ashore, a man rowed out to ask him if he would attend a sufferer. "He is too poor to pay," the man added.

The doctor went ashore to find a tiny hovel, the roof covered with sods of earth. The floor was made of pebbles from the beach, and the earth walls were reeking with damp. There was only one room. Six children were huddled in a corner and on a wooden bunk their father lay gasping for breath, while his wife gave him sips of water in an iron spoon. The man was suffering from pneumonia, and but for Grenfell's help would have died without doctor nurse or medicine.

thirteenth—the low skimming of the Java Sea under torrents of rain. Now, for an hour, the girl flies round and round in small circles in the middle of a double rainbow, looking in vain for a clearing in the mist. At last, at 5.0 p.m., she makes land and is forced to ground at Tjomal, Java (700 miles) where, with *Jason's* wings pierced through by bamboo spikes, Amy calmly alights and mends the holes with sticking-plaster.

From a most difficult and dangerous "take off" on the sixteenth morning. Amy reaches Sourabaya (850 miles) without mishap in the early afternoon. The seventeenth day is spent in mending *Jason* and some sorely-needed rest for Amy.

The eighteenth day, and at six in the morning Amy is off again, through the arch of a lovely rainbow and in the highest spirits. Atambua (760 miles), in the island of Timor, is the goal, but the flight, along the chain of islands, is a long one. Darkness falls, and Amy, flying over and round the mountains, can find no landing-ground. At last, almost in sheer despair, she comes to

ground in a small clearing, suddenly to find herself in the midst of an ugly crowd of black men rushing at her with spears. But they are friendly natives, with a mission hard by. And Atambua is only a dozen miles away. The nineteenth day is spent in repairs and "tuning up" for the most dangerous stage of all.

Port Darwin at Last.

At dawn on Saturday, May 24, and with the happy omen of Empire Day, Amy soars aloft for her perilous flight of 400 miles over a desolate, shark-ridden sea. It is safely crossed. At 4.0 p.m. Amy makes a perfect landing at Port Darwin.

Australia, England and the world, with one voice, acclaim her and rejoice. Amy Johnson, by her almost incredible will-power, courage, skill, good temper and endurance has, under God's hand, performed the most wonderful feat by a woman in all history.

"Tell England," Amy cried on landing, and in the very spirit of Francis Drake, "that I am well and very happy."



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SAFE ONCE MORE

On her arrival at Croydon, Miss Johnson's reception was worthy of her magnificent feat—a performance that will be recorded for ever in the annals of the air. In the above photograph she is seen speaking into a microphone at Croydon Aerodrome.